4600001

1. $y = \ln(\sin^2 2x+\cos^2 2x)$ funksiyaning eng kichik musbat davrini toping.
A) π B) $\frac{\pi}{2}$ C) 2π D) *mavjud emas*

2. Axborot-resurs markazida 15 ta kompyuter o'rnatilmoqda, bunda ayrimlari kabel bilan ulanmoqda. Har bir kompyuterdan 4 ta kabel chiqishi lozim bo'lsa, jami bo'lib nechta kabel kerak?
A) *40* B) *30* C) *60* D) *24*

3. Beshta a_1, a_2, a_3, a_4, a_5 tub son ayirmasi 6 ga teng bo'lgan arifmetik progressiyani tashkil qilsa, $\frac{a_3 + a_5}{2}$ ni toping.
A) *17* B) *bir qiymatni aniqlab bo'lmaydi* C) *11* D) *23*

4. $3-4\cos^2\alpha$ ifodani ko'paytma ko'rinishiga keltiring.
A) $-4\sin(\alpha-30°)\cdot\sin(\alpha+30°)$ B) $4\sin(\alpha-30°)\cdot\cos(\alpha+30°)$
C) $4\cos(\alpha-30°)\cdot\sin(\alpha+30°)$ D) $4\sin(\alpha-30°)\cdot\sin(\alpha+30°)$

5. Qandaydir a, b, c uchun $\cos 4x = a\cos^4 x+b\cos^2 x+c$ ayniyat bajarilsa, a+b ni toping.
A) *0* B) -4 C) *1* D) *3*

6. Agar $\log_9 25=a$, $\log_{25} 8=b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{2ab}{2}$ B) $\frac{3ab}{2}$ C) $\frac{2}{3ab}$ D) $\frac{3}{2ab}$

7. $1-2+3-4+5-6+\ldots+2015-2016+2017$ ni hisoblang.
A) -1008 B) *1010* C) *1009* D) -1009

8. $f(x) = a^2\frac{(x-b)(x-c)}{(a-b)(a-c)} + b^2\frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning $x = -1$ da hosilasini toping. (Bu yerda $(a-b)(a-c)(b-c) \neq 0$).
A) -2 B) -1 C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} x + y = 7 \\ \lg x + \lg y = 1 \end{cases}$ tenglamalar sistemasining yechimlaridan iborat barcha x va y larning yig'indisini toping.
A) *20* B) *14* C) *7* D) *12*

10. $\frac{2,(99)-3,2}{x} = \frac{5\frac{1}{2}-3\frac{2}{3}}{7:2}$ proporsiyadan x ni toping.
A) $\frac{49}{73}$ B) $-\frac{21}{55}$ C) $-\frac{5}{7}$ D) $\frac{22}{59}$

11. $x\cdot 2^{\log_x 3} < 6$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *1* B) *3* C) *0* D) *2*

12. $x < 0$ da $|x-|x-11||-11$ ifodani modul belgisisiz yozing.
A) $2x$ B) *0* C) $2x-22$ D) $-2x$

13. $\sqrt{3-x} > x-1$ tengsizlikni yeching.
A) $(-\infty;2)$ B) $(0;3]$ C) $(2;3]$ D) $(1;3]$

14. a ning qanday qiymatida $P(x) = 2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko'phadning koeffitsiyentlari yig'indisi 7 ga teng bo'ladi?
A) -1 B) -4 C) *2* D) *3*

15. $y = \frac{\sqrt{2x-1}+\sqrt{x-1}}{x^2-5x+8}$ funksiyaning aniqlanish sohasini toping.
A) $[1;\infty)$ B) $[0,5;1]$ C) $[0,5;+\infty)$ D) $(\infty;0,5]$

16. Moddiy nuqta to'g'ri chiziq bo'ylab $x(t) = 0,5t^3-3t^2+2t+2$ qonun bo'yicha harakatlanmoqda, bu yerda x – koordinatalar boshidan nuqtagacha bo'lgan masofa (metrlarda o'lchanadi), t – vaqt(sekundlarda o'lchanadi).
t = 6 sekund bo'lganda nuqtaning tezligini (m/s) toping.
A) *23* B) *20* C) *12* D) *0*

17. Agar $f(x) = x^3+2ax^2+3bx+8$ va $f''(3) = 22$ bo'lsa, a ni toping.
A) *2* B) *4* C) *3* D) *1*

18. $\int_{-1}^{1}(4x^5 - x^3 + 4x)dx$ aniq integralni hisoblang.
A) *0* B) $\frac{5}{24}$ C) $\frac{7}{3}$ D) $\frac{3}{4}$

19. $\int\frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) $\arcsin x + C$ B) $0,5\arcsin x + C$ C) $\arcsin\frac{x}{2} + C$ D) $\frac{1}{2}\arcsin\frac{x}{2} + C$

20. Teng yonli ABCD trapetsiyada AC dioganal CD tomonga perpendikulyar. Agar AD = 4, $|AB|^2+|BC|^2 = 11$ bo'lsa, |AB| ni toping.
A) *3* B) $\sqrt{2}$ C) *2* D) *1,5*

21. To'g'ri burchakli uchburchakda gipotenuza va kichik katetning yig'indisi 27 ga teng. Agar katta katetning uzunligi $9\sqrt{3}$ ga teng bo'lsa, unga tashqi chizilgan aylana uzunligini toping.
A) 81π B) 9π C) 36π D) 18π

22. $y = x$, $y = -x$ va $y = -3$ to'g'ri chiziqlar hosil qilgan uchburchak yuzini toping.
A) *9* B) *3* C) *8* D) *4*

23. Muntazam to'rtburchakli prizma asosining yuzi 36 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $48\sqrt{6}$ B) $30\sqrt{6}$ C) $42\sqrt{6}$ D) $40\sqrt{6}$

24. $\vec{a}(2;3;4)$ va $\vec{b}(1;3;4)$ vektorlar berilgan. $\vec{c} = 2\vec{a} + \vec{b}$ vektorning uzunligini toping.
A) $\sqrt{250}$ B) $\sqrt{280}$ C) $\sqrt{220}$ D) $\sqrt{310}$

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to'rtburchak yuzi 10 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *15* B) *14* C) *10* D) *20*

26. Koordinatalari A(−2;0), B(4;0) va C(2;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) 18π B) 15π C) 16π D) 12π

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko'pi bilan bitta imtihon qo'yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

28. Agar $\frac{4^x + 8^x + 12^x}{5^x + 10^x + 15^x} = \frac{250}{128}$ bo'lsa, x ni toping.
A) -3 B) -5 C) -4 D) -2

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y= \sin^2(x-a)-b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) $N(a;-b)$ B) $N(b;a)$ C) $N(a;b)$ D) $N(-a;b)$

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CVCIV="«Axborot» so'zi fransuz tilidagi «informatio» so'zidan kelib chiqqan"
IV="XX asrning 50-yillarida informatika faniga asos solingan"
XIX="Informatika uchun o'rganish obyekti -- bu axborot "
A) *CCXIX* B) *XXIII* C) *CCXVIII* D) *CCXVII*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'nbeshlik sanoq sistemasiga o'tkazing.
A) *7B* B) *83* C) *67* D) *58*

33. A = "Mening kompyuterim" maxsus qobiq dasturdir."
B = "Fayl nomida*,\ , / belgilarini ishlatish mumkin."
C = "Kompyuter ishiga zarar keltiruvchi dasturlardan himoyalovchi dasturlar arxivatorlar deb ataladi." SHu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
(not A or B) and (C or not B) or not C
A) *Ba'zi mulohazalarning qiymatini aniqlab bolmaydi*
B) *Yolg'on* C) *Rost* D) *Ifodada xatolik bor*

34. MS Excel.
=?(−23;6) – ЗНАЧЕН(ЗАМЕНИТЕЬ(??(−23;6);2;2;6))
formulaning natijasi 67 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Мин, Мин* B) *Остат, Заменить* C) *Мин, Макс* D) *Остат, Сцепить*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda tagchiziqli va og'ma shrift qo'llanilgan?
<table> <tr> <td colspan=2> <b> <a href="#test">
test < / em> < / b > < / a> < / td> < td rowspan=2>
<u> <sup> test < / sup > < / u >
< / strong > </ ul> </td> </tr> <tr> <td> <cite> <u>
<img src=test.jpg> test < /u> </cite> </td> <td> <dl>
<sub> <dd> test </ sub> </dl> </td> </tr> </table>
A) *Birinchi katakda* B) *Ikkinchi katakda*
C) *Uchinchi katakda* D) *To'rtinchi katakda*

36. Paskal. Dastur natijasini aniqlang.
Var a,b,c: integer; k:boolean; s:string;
Begin Randomize; S:='INFORMATIKA';
a:=1+random(1); b:=1+trunc(random); k:=true;
while k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(s[a]+s[b]+s[c]); readln; End.
A) *NON* B) *IFA* C) *Natijani aniqlab bo'lmaydi* D) *IIF*

4600002

1. a va b natural sonlarning umumiy bo'luvchilari soni 6 ga teng bo'lsa, a+3b va b sonlarning umumiy bo'luvchilari nechta?
A) *bir qiymatni aniqlab bo'lmaydi* B) *6* C) *1* D) *4*

2. Axborot-resurs markazida 15 ta kompyuter o'rnatilmoqda, bunda ayrimlari kabel bilan ulanmoqda. Har bir kompyuterdan 4 ta kabel chiqishi lozim bo'lsa, jami bo'lib nechta kabel kerak?
A) *40* B) *30* C) *60* D) *24*

3. Arifmetik progressiyada 10–hadi 7 ga, 7–hadi esa 10 ga teng. Progressiyaning 15–hadini toping.
A) *14* B) *2* C) *4* D) *13*

4. Agar $\cos\left(\frac{\pi}{4}-a\right)=\sqrt{\frac{1}{8}}$ bo'lsa, sin2α ning qiymatini toping.
A) *0,25* B) *−0,5* C) *−0,75* D) *0,75*

5. Qandaydir a, b uchun cos4x=acos^{4}x−8cos^{2}x+b ayniyat bajarilsa, a+b ni toping.
A) *−7* B) *3* C) *9* D) *0*

6. y = f(x) funksiya D to'plamda noqat'iy o'suvchi bo'lsin. D to'plamdan olingan ixtiyoriy a,b elementlari uchun (a > b) quyidagi munosabatlardan qaysi biri o'rinli?
A) $f(b) \le f(a)$ B) $f(a) < f(b)$ C) $f(b) = f(a)$ D) $f(a) \le f(b)$

7. $5\cdot[12\frac{2}{7}+5\frac{3}{7}]-8\cdot[3\frac{2}{3}]\cdot[2,(9)]$ ni hisoblang. Bu yerda [a] – a sonning butun qismi.
A) *37* B) *12* C) *13* D) *15*

8. $f(x)=a^2\frac{(x-b)(x-c)}{(a-b)(a-c)}+b^2\frac{(x-a)(x-c)}{(b-a)(b-c)}+c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = 2 da hosilasini toping. (Bu yerda (a−b)(a−c)(b−c) ≠ 0)
A) *2* B) *4* C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} x+y=7 \\ \lg x+\lg y=1 \end{cases}$ tenglamalar sistemasining yechimlaridan iborat barcha x va y larning yig'indisini toping.
A) *20* B) *14* C) *7* D) *12*

10. [2x–1]=x tenglama yechimlari ko'paytmasini (agar yechimlari bitta bo'lsa o'zini) toping. Bu yerda [a] - a sonning butun qismi.
A) *3* B) *0* C) *2* D) *1*

11. $x\cdot 6^{\log_x 7}\le 42$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *2* B) *0* C) *1* D) *3*

12. x < 0 da |x−|x−11||−11 ifodani modul belgisisiz yozing.
A) *2x* B) *0* C) *2x−22* D) *−2x*

13. x < 6 bo'lsa, 3x+2y−6 = 0 tenglamadan y ning qiymatlarini toping.
A) $y < -6$ B) $-1 < y < 1$ C) $y > -6$ D) $y > -3$

14. P(x) = (3x−1)^{2017}•(2x−1)^{2016}+(4x−3)^2•(6x−5)^2+2 ko'phad koeffitsiyentlarining yig'indisini toping.
A) $2^{2017}+3$ B) $2^{2017}+1$ C) *9* D) *16*

15. $y=\frac{|x^2-x-12|}{\sqrt{11x-x^2-18}}$ funksiyaning aniqlanish sohasini toping.
A) *(2;9)* B) *(4;9)* C) *(2;4]* D) *(−3;9)*

16. Agar f(x) = x^{5x} bo'lsa, f '(x) ni toping.
A) $x^{5x}(5+\ln x)$ B) $x^{5x}(1+\ln x)$ C) $5x^{5x}(1+\ln x)$ D) $5x^{5x}(1+5\ln x)$

17. Agar f(x) = x^3+2ax^2+3bx+4 va f "(2) = 20 bo'lsa, a ni toping.
A) *1* B) *4* C) *3* D) *2*

18. Agar $\int_a^b(3x^2+1)dx=108$ va a^2+ab+b^2 = 17 bo'lsa, b−a ni toping.
A) *6* B) *7* C) *9* D) *2*

19. $\int\frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) $\frac{1}{2}arcsin\frac{x}{2}+C$ B) $arcsin\frac{x}{2}+C$ C) $arcsinx+C$ D) $\frac{1}{2}arcsinx+C$

20. Diagonallari 90° burchak ostida kesishuvchi ABCD trapetsiyaning asoslari mos ravishda 9 va 1 ga teng. Dioganallarining kesishish nuqtasidan asoslariga parallel to'g'ri chiziq o'tkazilgan. Ushbu to'g'ri chiziqning yon tomonlar bilan chegaralangan kesmasi uzunligini toping.
A) *1,2* B) *1,6* C) *1,8* D) *0,9*

21. Tekislikni kesib o'tuvchi kesmaning uchlari tekislikdan 4 va 10 masofada tursa, berilgan kesma o'rtasidan tekislikkacha bo'lgan masofani toping.
A) *4* B) *3* C) *2* D) *1*

22. Kvadratning tomonlari koordinata o'qlariga parallel va 4 ga teng. Uning markazi

(2;1) nuqtada joylashgan. Kvadrat tomonlarining ordinata o'qi bilan kesishish nuqtalari koordinatalarini toping.
A) *(0;−1), (0;3)* B) *(0;1), (0;3)* C) *(0;−3), (0;1)* D) *(0;−2), (0;2)*

23. Muntazam to'rtburchakli prizma asosining yuzi 36 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $48\sqrt{6}$ B) $30\sqrt{6}$ C) $42\sqrt{6}$ D) $40\sqrt{6}$

24. Piramidaning asosi katetlari 10 va 24 ga teng bo'lgan to'g'ri burchakli uchburchakdan iborat. Piramidaning barcha yon qirralari asos tekisligi bilan 45° li burchak tashkil etsa, uning hajmini toping.
A) *700* B) *130* C) *72* D) *520*

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to'rtburchak yuzi 32 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *36* B) *48* C) *60* D) *52*

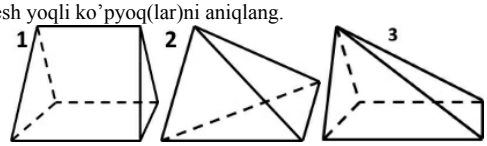
26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko'pi bilan bitta imtihon qo'yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

28. Agar $\frac{3^x + 6^x + 9^x}{5^x + 10^x + 15^x} = \frac{50}{18}$ bo'lsa, x ni toping.
A) *−4* B) *−2* C) *−3* D) *−5*

29. $y=\sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x+a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(a;−b)* B) *N(−a;b)* C) *N(a;b)* D) *N(b;a)*

30. Besh yoqli ko'pyoq(lar)ni aniqlang.



A) *1, 3* B) *1* C) *3* D) *2*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. 240, 301, 220, 332 butun sonlarni barchasini yozish mumkin bo'lgan eng kichik asosli sanoq sistemasida shu sonlar yig'indisini aniqlang.
A) *2143* B) *1535* C) *3013* D) *1423*

33. A="Boot Record─buyruq protsessoridir." B="Freeware─mutloqo bepul, birlamchi kodi ochiq dasturiy ta'minotdir."
C="'Paradox─operatsion sistemadir." Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C or not (B or not A)
A) *Rost* B) *Yolg'on* C) *Ifodada xatolik bor* D) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo'lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс*
C) *Сумм, Мин* D) *Левсимв, Степень*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda tagchiziqli va og'ma shrift qo'llanilgan?
<table> <tr> <td colspan=2> <b> <a href="#test">
test < / em> < / b > < / a> < / td> < td rowspan=2>
<u> <sup> test < / sup > < / u >
< / strong > </ ul> </td> </tr> <tr> <td> <cite> <u>
<img src=test.jpg> test < /u> </cite> </td> <td> <dl>
<sub> <dd> test </ sub> </dl> </td> </tr> </table>
A) *Birinchi katakda* B) *Ikkinchi katakda*
C) *Uchinchi katakda* D) *To'rtinchi katakda*

36. Paskal. Dastur natijasini aniqlang.
```
Var p,k: longint; s:string;
F:array[1..11] of integer;
Begin Randomize; S:='INFORMATIKA';
P:=1; k:=0; repeat k:=k+1;
F[k]:=round((k+random(k))/(k+1.1));
P:=p*F[k]; until k>=6;
Write(s[p+2]+s[f[3]]+s[k]); readln; End.
```
A) *Natijani aniqlab bo'lmaydi* B) *NMO* C) *NIM* D) *OIM*

4600003

1. Agar x = y+4 bo'lsa, $\frac{x^2 + 3y - 3x - xy}{2x - 6}$ ifodaning qiymatini toping.
A) *1,8* B) *2,5* C) *1* D) *2*

2. Bir nechta bola 36 dona olmani yeyishmoqchi edi. Ali "Men olmalarni shunday taqsimlay olmanki, har birimizda 5 tadan ko'p olma bo'lmaydi" dedi. Vali esa "Men olmalarni shunday taqsimlay olamanki, xech birimiz olmasiz qolmaymiz va barchamizda olmalar soni turlicha bo'ladi". bolalar sonini aniqlang.
A) *10 ta* B) *11 ta* C) *8 ta* D) *9 ta*

3. Beshta a_1, a_2, a_3, a_4, a_5 tub son ayirmasi 6 ga teng bo'lgan arifmetik progressiyani tashkil qilsa, $\frac{a_3 + a_5}{2}$ ni toping.
A) *17* B) *bir qiymatni aniqlab bo'lmaydi* C) *11* D) *23*

4. Agar tgα=−4 bo'lsa, $\frac{2\cos 2a - 1}{2 - 9\cos^2 a}$ ning qiymatini toping.
A) *−0,5* B) *−9,5* C) *−3,16* D) *−1,88*

5. Qandaydir a, b uchun $\cos 4x = a\cos^4 x + b\cos^2 x + 1$ ayniyat bajarilsa, a+b ni toping.
A) *−4* B) *3* C) *−3* D) *0*

6. y = f(x) funksiya D to'plamda noqat'iy o'suvchi bo'lsin. D to'plamdan olingan ixtiyoriy a,b elementlari uchun (a > b) quyidagi munosabatlardan qaysi biri o'rinli?
A) $f(b) \le f(a)$ B) $f(a) < f(b)$ C) $f(b) = f(a)$ D) $f(a) \le f(b)$

7. $\frac{2^5 \cdot 11^8}{22^{10}} \cdot \frac{34^4 \cdot 2057}{17^5}$ ni hisoblang.
A) $\frac{1}{2}$ B) $\frac{2}{187}$ C) $\frac{1}{34}$ D) *2*

8. Agar x = 3 bo'lsa, $f(x) = \frac{(x-b)(x-c)}{(a-b)(a-c)} + \frac{(x-a)(x-c)}{(b-a)(b-c)} + \frac{(x-a)(x-b)}{(c-a)(c-b)}$ ning qiymatini toping. (Bu yerda (a─b)(a─c)(b─c)≠0)
A) *2* B) *1* C) *a, b, c ga bog'liq* D) *0*

9. (x;y) juftlik $\begin{cases} EKUB(x,y) = 30 \\ \frac{x}{y} = \frac{3}{5} \end{cases}$ tenglamalar sistemasining yechimi bo'lsa, x+y ni hisoblang. (x, y ϵN)
A) *510* B) *480* C) *300* D) *240*

10. $x^2-\sqrt{x^2-10x+25}=-5$ tenglamaning haqiqiy ildizlari yig'indisini toping.
A) *−1* B) *−2* C) *1* D) *0*

11. $x^{\lg^2 x-3\lg x+1}<1000$ tengsizlikning eng katta natural yechimini toping.
A) *1000* B) *999* C) *1001* D) *99*

12. $\frac{|x+4|+x}{x+3}\geq 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *3* B) *4* C) *5* D) *cheksiz ko'p*

13. $x^6-28x^3+27\leq 0$ tengsizlik nechta butun yechimga ega?
A) *1* B) *3* C) *27* D) *cheksiz ko'p*

14. a ning qanday qiymatida $P(x)=2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko'phadning koeffitsiyentlari yig'indisi 7 ga teng bo'ladi?
A) *−1* B) *−4* C) *2* D) *3*

15. $y=\frac{x^2+16}{x}$ funksiyaning qiymatlar sohasiga tegishli bo'lmagan butun sonlar yig'indisini toping.
A) *−8* B) *−2* C) *4* D) *0*

16. Agar $f(x)=\ln e^x-\log_x x^2$ bo'lsa, $f'(1)+f(e)$ ning qiymatini toping.
A) *e* B) *e−2* C) *−2* D) *e−1*

17. Agar $f(x)=x^3+2ax^2+3bx+8$ va $f''(3)=22$ bo'lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. $\int_{-\frac{\pi}{3}}^{\frac{\pi}{3}}(4\sin 2x-3\sin x+\frac{3}{2\pi})dx$ aniq integralni hisoblang.
A) $\frac{3}{4}$ B) $\frac{\sqrt{3}}{3}-\frac{1}{2}$ C) $\frac{\sqrt{3}}{2}$ D) *1*

19. $\int\frac{dx}{3+x^2}$ ni hisoblang.
A) $\frac{1}{\sqrt{3}}\operatorname{arctg}x+C$ B) $\frac{1}{3}\operatorname{arctg}\frac{x}{3}+C$
C) $\frac{1}{\sqrt{3}}\operatorname{arctg}\frac{x}{3}+C$ D) $\frac{1}{\sqrt{3}}\operatorname{arctg}\frac{x}{\sqrt{3}}+C$

20. Diagonallari 90° burchak ostida kesishuvchi ABCD trapetsiyaning asoslari mos ravishda 8 va 2 ga teng. Dioganallarining kesishish nuqtasidan asoslariga parallel to'g'ri chiziq o'tkazilgan. Ushbu to'g'ri chiziqning yon tomonlar bilan chegaralangan kesmasi uzunligini toping.
A) *3,2* B) *1,6* C) *1,8* D) *3,25*

21. Tomonlari 15 va 18 ga teng bo'lgan to'g'ri to'rtburchak birlik kvadratlarga bo'lingan. Uning diagonali birlik kvadratchalarning uchlari bo'linish nuqtalarning nechtasidan o'tadi?
A) *1* B) *0* C) *3* D) *4*

22. ABCD to'rtburchak aylanaga ichki chizilgan. ABC uchburchak 110° ga, CAD burchak 64° ga teng bo'lsa, ABD burchakning gradus o'lchovini toping.
A) *36°* B) *44°* C) *46°* D) *22°*

23. M nuqta $ABCA_1B_1C_1$ muntazam prizma ABC asosidagi BC tomonning o'rtasi bo'lsin. Prizmaning yon qirrasi $\sqrt{44}$ ga, asosining tomonlari 16 ga teng bo'lsa, B_1M to'g'ri chiziq va ABB_1A_1 yon yoqi orasidagi burchakning sinusini toping.
A) *0,5* B) *0,6* C) $\frac{2}{3}$ D) *0,8*

24. Piramidaning asosi, tomoni $4\sqrt{3}$ o'tkir burchagi 45° ga teng bo'lgan romdan iborat. Ushbu piramidaga ichki chizilgan konusning yasovchisi asos tekisligi bilan 60° li burchak tashkil etadi. Konusning hajmini toping.
A) $6\sqrt{2}\pi$ B) 3π C) $6\sqrt{3}\pi$ D) 6π

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to'rtburchak yuzi 8 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *24* B) *16* C) *12* D) *8*

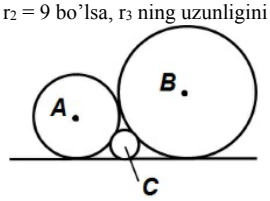
26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. $\{x/x\ N, -3,2<x<4,8\}$ to'plamning nechta qism to'plamlari mavjud?
A) *32* B) *16* C) *4* D) *8*

28. Agar $\frac{4^x+8^x+12^x}{5^x+10^x+15^x}=\frac{128}{250}$ bo'lsa, x ni hisoblang.
A) *4* B) *2* C) *3* D) *5*

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida y=f(x-m) – n funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N (-m;-n)* B) *N (m;n)* C) *N (m;-n)* D) *N (-m;n)*

30. Umumiy urinmaga ega bo'lgan A, B, C markazli aylanalar o'zaro tashqi urinadilar. Ularning radiuslari mos ravishda r_1, r_2 va r_3 bo'lsin. Agar $r_1=4$ va $r_2=9$ bo'lsa, r_3 ning uzunligini toping.



A) $\frac{49}{36}$ B) $\frac{26}{21}$ C) $\frac{36}{25}$ D) $\frac{32}{23}$

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi:
qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (65;101) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 7 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'n oltilik sanoq sistemasiga o'tkazing.
A) *87* B) *76* C) *A32* D) *215*

33. Informatika o'rganadigan asosiy ashyoni aniqlang.
A) *algoritm* B) *dastur* C) *kompyuter* D) *axborot*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo'lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс*
C) *Сумм, Мин* D) *Левсимв, Степень*

35. Faylga yo'l berilgan: C: \Mypictures\klass\picture.bmp Bosh katalogni ko'rsating.
A) *my pictures* B) *picture* C) *C:* D) *klass*

36. Paskal. Dastur natijasini aniqlang.
```
Var a,b,c: integer; k:boolean; s:string;
Begin Randomize; S:='INFORMATIKA';
a:=1+random(1); b:=1+trunc(random); k:=true;
while k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(s[a]+s[b]+s[c]); readln; End.
```

A) *NON* B) *IFA* C) *Natijani aniqlab bo'lmaydi* D) *IIF*

4600004

1. To'g'ri tenglikni aniqlang. (a∈R.)
A) $a^0 = 1, a \neq 0$ B) $\sqrt{a^2} = a$ C) $(\sqrt{a})^2 = a$ D) $a^{\frac{m}{n}} = \sqrt[n]{a^m}$

2. Bir nechta bola 36 dona olmani yeyishmoqchi edi. Ali "Men olmalarni shunday taqsimlay olmanki, har birimizda 5 tadan ko'p olma bo'lmaydi" dedi. Vali esa "Men olmalarni shunday taqsimlay olamanki, xech birimiz olmasiz qolmaymiz va barchamizda olmalar soni turlicha bo'ladi". bolalar sonini aniqlang.
A) *10 ta* B) *11 ta* C) *8 ta* D) *9 ta*

3. Arifmetik progressiyada 10─hadi 7 ga , 7─hadi esa 10 ga teng. Progressiyaning 13─hadini toping.
A) *4* B) *14* C) *5* D) *13*

4. Agar tgα=−4 bo'lsa, $\frac{2\cos 2a - 1}{2 - 9\cos^2 a}$ ning qiymatini toping.
A) *−0,5* B) *−9,5* C) *−3,16* D) *−1,88*

5. Agar barcha x, y lar uchun $x^3+4x^2y+axy^2+3xy-bx^cy+7xy^2+dxy+y^2 = x^3+y^2$ tenglik bajarilsa, b─c─d ni toping.
A) *2* B) *−4* C) *5* D) *−2*

6. Har qanday (x_1, x_2) oraliqda uchun y = f(x) funksiya hosilasi manfiy bo'lsin. (x_1, x_2) oraliqqa tegishli ixtiyoriy a va b (a < b) uchun qanday tengsizlik o'rinli?
A) *f(b) ≥ f(a)* B) *f(b) > f(a)* C) *f(b) < f(a)* D) *f(a) < f(b) <0*

7. $5\cdot[12\frac{2}{7} + 5\frac{3}{7}] - 8\cdot[3\frac{2}{3}]\cdot[2,(9)]$ ni hisoblang. Bu yerda [a] – a sonning butun qismi.
A) *15* B) *13* C) *37* D) *12*

8. Agar a = −5, b = −4 bo'lsa, $(a^3+a^2b+ab^2+b^3)(a-b)$ ifodani qiymatini toping.
A) *425* B) *330* C) *369* D) *544*

9. $\begin{cases} |5 + x| \le 9 \\ |2x + 5| \ge 13 \end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *7* B) *4* C) *6* D) *5*

10. $2x - 3\sqrt{2x-1} + 1 = 0$ tenglamani yeching.
A) *1 va 2,5* B) *−2,5 va −2* C) *2 va 2,5* D) *−1 va −2,5*

11. $64 - x^{5-\log_2 x} = 0$ tenglamaning ildizlari ko'paytmasini toping.
A) *8* B) *64* C) *32* D) *16*

12. $\frac{|x + 3| + x}{x + 2} > 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *2* B) *1* C) *0* D) *3*

13. x < 6 bo'lsa, 3x+2y−6 = 0 tenglamadan y ning qiymatlarini toping.
A) *y < −6* B) *−1 < y < 1* C) *y > −6* D) *y > −3*

14. $P(x) = (3x-1)^{2017}\cdot(2x-1)^{2016}+(4x-3)^2\cdot(6x-5)^2+2$ ko'phad koeffitsiyentlarining yig'indisini toping.
A) $2^{2017}+3$ B) $2^{2017}+1$ C) *9* D) *16*

15. $y = \frac{|x^2 - x - 12|}{\sqrt{11x - x^2 - 18}}$ funksiyaning aniqlanish sohasini toping.
A) *(2;9)* B) *(4;9)* C) *(2;4]* D) *(−3;9)*

16. $f(x) = -3x^2+9x+t-3$ funksiyaning maksimumi 5 ga teng. t ning qiymatini toping.
A) *1* B) *1,75* C) *1,25* D) *2*

17. Agar $f(x) = x^3+2ax^2+3bx+8$ va f "(3) = 22 bo'lsa, a ni toping.
A) *2* B) *4* C) *3* D) *1*

18. $\int_1^8 \frac{4}{x} dx$ integralni hisoblang.
A) *18ln2* B) *12ln2* C) *6ln2* D) *12ln4*

19. Ushbu $f(x) = \frac{2x - 1}{x^2 - x - 6}$ funksiyaning boshlang'ich funksiyasini toping.
A) *ln|x+2|+C* B) *ln(|x−3|•|x+2|)+C* C) *ln(x−3)+C* D) $\frac{2x^2}{x - 3} + C$

20. Diagonallari 90° burchak ostida kesishuvchi ABCD trapetsiyaning asoslari mos ravishda 8 va 2 ga teng. Dioganallarining kesishish nuqtasidan asoslariga parallel to'g'ri chiziq o'tkazilgan. Ushbu to'g'ri chiziqning yon tomonlar bilan chegaralangan kesmasi uzunligini toping.
A) *3,2* B) *1,6* C) *1,8* D) *3,25*

21. ABC to'g'ri burchakli uchburchakning B to'g'ri burchagi uchidan BD balandlik tushirilgan. Hosil bo'lgan ABD uchburchakka radiusi 7 ga teng, BCD uchburchakka esa radiusi 24 ga teng bo'lgan aylanalar ichki chizilgan. BD balandlikni toping.
A) *54* B) *52* C) *56* D) *58*

22. ABC teng yonli (AB=AC) uchburchakning BD bisektrisasi AC tomonni AD=16 va DC=8 kesmalarga ajratsa, BD bissektrisa uzunligini toping.
A) $4\sqrt{5}$ B) $4\sqrt{10}$ C) *15* D) *12*

23. M nuqta $ABCA_1B_1C_1$ muntazam prizma ABC asosidagi BC tomonning o'rtasi bo'lsin. Prizmaning yon qirrasi $\sqrt{44}$ ga, asosining tomonlari 16 ga teng bo'lsa, B_1M to'g'ri chiziq va ABB_1A_1 yon yoqi orasidagi burchakning sinusini toping.
A) *0,5* B) *0,6* C) *2/3* D) *0,8*

24. $a(-2;3)$ va $b(2;n)$ vektorlar berilgan. n ning qanday qiymatida bu vektorlar o'zaro perpendikulyar boladi
A) $\frac{3}{4}$ B) $\frac{4}{3}$ C) $-\frac{3}{4}$ D) $-\frac{4}{3}$

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;2), C(8;2). ABCD parallelogrammning yuzini toping.
A) *6* B) *14* C) *5* D) *7*

26. Koordinatalari A(−2;0), B(4;0) va C(1;3) nuqtalarda bo'lganuchburchakning Ox o'qi atrofida aylantirishdan hosil bo'lgan jismning hajmini toping.
A) *18π* B) *16π* C) *12π* D) *15π*

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko'pi bilan bitta imtihon qo'yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

28. $\frac{2^x - 3^x}{3\cdot 2^{x-1}} > 3 + (\frac{2}{3})^x$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *2* B) *0* C) *3* D) *1*

29. $y = \ln^3 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y = \ln^3(x - a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi? Bunda, x > a, x > 0
A) *N(a;−b)* B) *N(a;b)* C) *N(−a;b)* D) *N(b;a)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning

birligi sifatidaqaraladi”
VCIII = “Software – bu informatikaning qismi bo’lib, dasturiy vositalar sifatida qaraladi”
IV = “Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi”
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (65;101) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 7 raqami qatnashgan barcha sonlarni o’chirib tashladi. Qolgan sonlar yig’indisini sakkizlik sanoq sistemasida aniqlang va o’n oltilik sanoq sistemasiga o’tkazing.
A) *87* B) *76* C) *A32* D) *215*

33. Axborotni uzatish o’lchov birligi sifatida ... qabul qilingan.
A) *1 megabit* B) *1 bit* C) *1 bot* D) *1 bayt*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo’lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo’lishi uchun ? va ?? belgilarining o’rniga qo’yish mumkin bo’lgan funksiyalar to’g’ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс*
C) *Сумм, Мин* D) *Левсимв, Степень*

35. Quyidagi html –hujjat kodi yozilishi bo’yicha kataklar ketma-ket sanalganda nechanchi katakda og’ma shriftli markerlangan ro’yhat qo’llanolgan?
<table> <tr> <td colspan=2>   test
  </td> <td rowspan=2>
 test </td> </tr> <tr> <td>
  test </td> <td>
<site> test </cite> </td> </tr> </table>
A) *Ikkinchi katakda* B) *To’rtinchi katakda*
C) *Uchinchi katakda* D) *Birinchi katakda*

36. Paskal. Dastur natijasini aniqlang.
Var p,k: longint; s:string;
F:array[1..11] of integer;
Begin Randomize; S:=’INFORMATIKA’;
P:=1; k:=0; repeat k:=k+1;
F[k]:=round((k+random(k))/(k+1.1));
P:=p*F[k]; until k>=6;
Write(s[p+2]+s[f[3]]+s[k]); readln; End.
A) *Natijani aniqlab bo’lmaydi* B) *NMO* C) *NIM* D) *OIM*

4600005

1. a va b natural sonlarning EKUK i 72 ga, EKUB i 12 ga teng bo’lsa, ularning ko’paytmasini toping.
A) *480* B) *360* C) *864* D) *960*

2. Bir nechta bola 36 dona olmani yeyishmoqchi edi. Ali “Men olmalarni shunday taqsimlay olmanki, har birimizda 5 tadan ko’p olma bo’lmaydi” dedi. Vali esa “Men olmalarni shunday taqsimlay olamanki, xech birimiz olmasiz qolmaymiz va barchamizda olmalar soni turlicha bo’ladi”. bolalar sonini aniqlang.
A) *10 ta* B) *11 ta* C) *8 ta* D) *9 ta*

3. Arifmetik progressiyada 10−hadi 7 ga, 7−hadi esa 10 ga teng. Progressiyaning 12−hadini toping.
A) *13* B) *6* C) *14* D) *5*

4. Agar $\cos\left(\frac{\pi}{4}-a\right)=\sqrt{\frac{1}{8}}$ bolsa, sin2α ning qiymatini toping.
A) *0,25* B) *−0,5* C) *−0,75* D) *0,75*

5. Qandaydir a, b uchun $\cos 4x = a\cos^4 x - 8\cos^2 x + b$ ayniyat bajarilsa, b ni toping.
A) *2* B) *−1* C) *0* D) *1*

6. y = f(x) funksiya D to'plamda noqat'iy o'suvchi bo'lsin. D to'plamdan olingan ixtiyoriy a,b elementlari uchun (a > b) quyidagi munosabatlardan qaysi biri o'rinli?
A) $f(b) \le f(a)$ B) $f(a) < f(b)$ C) $f(b) = f(a)$ D) $f(a) \le f(b)$

7. 3−4+5−6+…..+2017−2018+2019 ni hisoblang.
A) *−1011* B) *1010* C) *1011* D) *−1008*

8. $f(x) = a^2\frac{(x-b)(x-c)}{(a-b)(a-c)} + b^2\frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = −1 da hosilasini toping. (Bu yerda (a−b)(a−c)(b−c) ≠ 0).
A) *−2* B) *−1* C) *0* D) *a, b, c ga bog’liq*

9. (x;y) juftlik $\begin{cases} EKUB(x,y) = 12 \\ \frac{x}{y} = \frac{3}{4} \end{cases}$ tenglamalar sistemasining yechimi bo'lsa, x+y ni hisoblang (x,y ϵN)
A) *84* B) *108* C) *168* D) *216*

10. $x^2-(k+1)x+k^2+k-32=0$ tenglama ildizlaridan biri 2 dan katta, ikkinchisi esa 2 dan kichik bo’lsa, k ning butun qiymatlari yig’indisini toping.
A) *6* B) *4* C) *0* D) *5*

11. $\log_2 10 \cdot \lg 2$ dan kichik bo’lgan natural sonlar nechta?
A) *2* B) *3* C) *0* D) *1*

12. $\frac{|x+4|+x}{x+3} > 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *2* B) *3* C) *4* D) *cheksiz ko'p*

13. x < 6 bo’lsa, 3x+2y−6 = 0 tenglamadan y ning qiymatlarini toping.
A) $y < -6$ B) $-1 < y < 1$ C) $y > -6$ D) $y > -3$

14. a ning qanday qiymatida $P(x) = 2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko’phadning koeffitsiyentlari yig’indisi 7 ga teng bo’ladi?
A) *−1* B) *−4* C) *2* D) *3*

15. $y = \frac{x^2+5}{x}$ funksiyaning qiymatlar sohasini toping.
A) $(-\infty;-2) \cup (2;\infty)$ B) $(-\infty;0) \cup [2\sqrt{5};\infty)$ C) $(-\infty;-2\sqrt{5}] \cup [2\sqrt{5};\infty)$ D) $[2\sqrt{5};\infty)$

16. Agar $f(x) = x^{5x}$ bo’lsa, f ‘(x) ni toping.
A) $x^{5x}(5+\ln x)$ B) $x^{5x}(1+\ln x)$ C) $5x^{5x}(1+\ln x)$ D) $5x^{5x}(1+5\ln x)$

17. Agar $f(x)= x^3-5x^2+x+a$ va f "(2) = f (1) bo'lsa, a ni toping.
A) *6* B) *10* C) *12* D) *5*

18. $\int_{-\frac{\pi}{3}}^{\frac{\pi}{3}}(4\sin 2x - 3\sin x + \frac{3}{2\pi})dx$ aniq integralni hisoblang.
A) $\frac{3}{4}$ B) $\frac{\sqrt{3}}{3}-\frac{1}{2}$ C) $\frac{\sqrt{3}}{2}$ D) *1*

19. a = −4 bo’lsa, $\int_a^{a+1}(\sin^2 2x + \cos^2 2x)dx$ aniqmas integralni hisoblang.
A) $\frac{\sqrt{2}-1}{2}$ B) *1* C) $2\sqrt{2}$ D) $\sqrt{2}$

20. ABCD trapetsiyada CF balandlik o’tkazilgan. Uning kichik asosi BC = 2 va AB = CD = AF = 5 bo’lsa, trapetsiyaning yuzini toping.
A) *25* B) *40* C) *10* D) *20*

21. Radiusi 3 ga teng bolgan sharga yasovchisi 4 ga teng bo'lgan konus ichki chizilgan. Konus yasovchisining asos tekisligi bilan tashkil etgan burchak sinusini toping.
A) $\frac{4}{9}$ B) $\frac{4}{5}$ C) $\frac{1}{3}$ D) $\frac{2}{3}$

22. Quyida keltirilgan jumlalardan to'g'risini toping.
A) *Agar ikki uchburchakning bir tomoni va ikkita burchagi mos ravishda teng bo'lsa, bu uchburchaklar teng bo'ladi.*

B) *Teng yonli uchburchakning burchaklari teng.*
C) *Teng yonli uchburchakning medianasi uning ham bissektrisasi, ham balanligi bo'ladi.*
D) *Uchburchak uchidan shu uch qarshisidagi tomon yotgan to'gri chiziqqa tushirilgan perpendikulyar uchburchakning balandligi deyiladi.*

23. Kubning dioganalidan ushbu dioganal bilan kesishmaydigan qirrasigacha bo'lgan masofa 4 ga teng. Kubning hajmini toping.
A) $144\sqrt{2}$ B) $240\sqrt{2}$ C) $180\sqrt{2}$ D) $128\sqrt{2}$

24. $a(1;4)$ va $b(-3;2)$ vektorlar berilgan. $a + \gamma b$ vektori b vektoriga perpendikulyar bo'ladigan γ sonni toping.
A) $-\frac{5}{13}$ B) $\frac{5}{13}$ C) $\sqrt{\frac{5}{13}}$ D) $-\sqrt{\frac{5}{13}}$

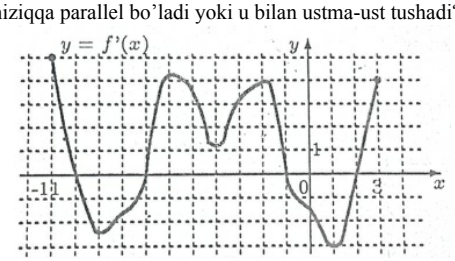
25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(8;3). D uchining absissasi va ordinatasining yig'indisini toping.
A) *0* B) *14* C) *8* D) *5*

26. Koordinatalari A(2;0), B(8;0) va C(6;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) 12π B) 15π C) 16π D) 18π

27. $\{ x/x\in N, x^2<32 \}$ to'plamni nechta usul bilan ikkita kesishmaydigan qism to'plamlar birlashmasi ko'rinishida ifodalash mumkin?
A) *5* B) *31* C) *32* D) *16*

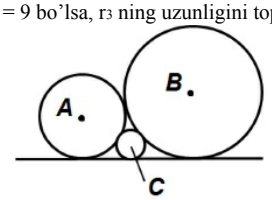
28. Agar $\frac{3^x + 6^x + 9^x}{5^x + 10^x + 15^x} = \frac{18}{50}$ bo'lsa, x ni toping.
A) *2* B) *4* C) *3* D) *5*

29. Chizmada $(-11;3)$ oraliqda aniqlangan f(x) funksiya hosilasining grafigi tasvirlangan. Nechta nuqtada f(x) funksiya grafigiga urinma y = x − 5 to'g'ri chiziqqa parallel bo'ladi yoki u bilan ustma-ust tushadi?



A) *2* B) *0* C) *4* D) *1*

30. Umumiy urinmaga ega bo'lgan A, B, C markazli aylanalar o'zaro tashqi urinadilar. Ularning radiuslari mos ravishda r_1, r_2 va r_3 bo'lsin. Agar $r_1 = 4$ va $r_2 = 9$ bo'lsa, r_3 ning uzunligini toping.



A) $\frac{49}{36}$ B) $\frac{26}{21}$ C) $\frac{36}{25}$ D) $\frac{32}{23}$

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi:
qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (55;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang.
A) *541* B) *644* C) *353* D) *423*

33. Qaysi javobda faqat qobiq dasturlar keltirilgan?
A) *Norton Commander, MS DOS, Volkov Commander*
B) *Vista, DOS3.3, Total Commander* C) *Linux, Norton Commander*
D) *Total Commander, Norton Commander*

34. A1=-7, B1=8, B2=4 bo'lsin. Quyidagi formula natijasi -23 ga teng bo'lishi uchun A2 katakka kiritilishi kerak bo'lgan qiymatni aniqlang.
=ЕСЛИ(ИЛИ(A1+B2<=A2*B1; A1*B1>0); A1*B2+B1-A2; A1*B1+B2+A2)
A) *1* B) *0* C) *3* D) *5*

35. Web brauzerda matnning ko'rinishi quyidagicha bo'lishi uchun uning HTML kodi qanday bo'lishi kerak? 6. Chala kvadrat tenglama ax⁴+c=0 ko'rinishida bo'lmaydi.
A) *<ul type="circle"> Chala kvadrat tenglama <s> ax ⁴ +c=0 </s> ko'rinishida bo'lmaydi. *
B) *<ol start="6"> Chala kvadrat tenglama ax ⁴ +c=0 </s> ko'rinishida bo'lmaydi. *
C) *<ol start="6">   Chala kvadrat tenglama <s> ax ⁴ +c=0 </s> ko'rinishida bo'lmaydi. *
D) * <s> <site> Chala kvadrat tenglama ax ² +c=0 ko'rinishida bo'lmaydi. </site> </s> *

36. Paskal. Dastur natijasini aniqlang.
```
Var p,k: longint; s:string;
F:array[1..11] of integer;
Begin Randomize; S:='INFORMATIKA';
P:=1; k:=0; repeat k:=k+1;
F[k]:=round((k+random(k))/(k+1.1));
P:=p*F[k]; until k>=6;
Write(s[p+2]+s[f[3]]+s[k]); readln; End.
```
A) *Natijani aniqlab bo'lmaydi* B) *NMO* C) *NIM* D) *OIM*

4600006

1. a va b natural sonlarning umumiy bo'luvchilari soni 6 ga teng bo'lsa, a+3b va b sonlarning umumiy bo'luvchilari nechta?
A) *bir qiymatni aniqlab bo'lmaydi* B) *6* C) *1* D) *4*

2. "Tutgan balig'ining og'irligi qancha?" degan savolga baliqchi: "Baliqning dumi 1 kg, boshi uning dumi hamda tanasi yarmining og'irligiga teng, tanasi esa boshi va dumining og'irligiga teng", deb javob berdi. Baliqning og'irligini (kg) toping.
A) *18* B) *6* C) *3* D) *12*

3. Arifmetik progressiyada 10−hadi 7 ga, 7−hadi esa 10 ga teng. Progressiyaning 12−hadini toping.
A) *13* B) *6* C) *14* D) *5*

4. Hisoblang. $\cos\frac{4\pi}{7}\cdot\cos\frac{5\pi}{7}\cdot\cos\frac{8\pi}{7}$
A) $-\frac{1}{8}$ B) $\frac{1}{8}$ C) $-\frac{1}{4}$ D) $\frac{1}{4}$

5. Qandaydir a, b uchun $\cos 4x = a\cos^4 x - 8\cos^2 x + b$ ayniyat bajarilsa, a+b ni toping.
A) *−7* B) *3* C) *9* D) *0*

6. Har qanday $(x_1;x_2)$ oraliq uchun y=f(x) funksiya hosilasi musbat bo'lsin. $(x_1;x_2)$ oraliqqa tegishli ixtiyoriy a va b (a>b) uchun qanday tengsizlik o'rinli?
A) $f(b) < f(a)$ B) $0 < f(a) < f(b)$ C) $f(a) < f(b)$ D) $f(b) \geq f(a)$

7. $\log_{\sqrt{6}-\sqrt{5}}(241 - 44\sqrt{30})$ ni hisoblang.
A) *6* B) *−5* C) *−4* D) *4*

8. Agar a = −5, b = −4 bo'lsa, $(a^3+a^2b+ab^2+b^3)(a-b)$ ifodani qiymatini toping.
A) *425* B) *330* C) *369* D) *544*

9. (x;y) juftlik $\begin{cases} EKUB(x,y) = 12 \\ \frac{x}{y} = \frac{3}{4} \end{cases}$ tenglamalar sistemasining yechimi bo'lsa,

x+y ni hisoblang (x,y ϵN)
A) *84* B) *108* C) *168* D) *216*

10. $a^3x^2+b^3x-a^3=0$, $a\neq0$ tenglama nechta yechimga ega?
A) *1 ta* B) *2 ta* C) *cheksiz ko'p* D) *8*

11. $x^{\lg^2 x-3\lg x+1} < 1000$ tengsizlikning eng katta natural yechimini toping.
A) *1000* B) *999* C) *1001* D) *99*

12. $\frac{|x+3|+x}{x+2} > 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *2* B) *1* C) *0* D) *3*

13. $\sqrt{3-x} > x-1$ tengsizlikni yeching.
A) *(−∞;2)* B) *(0;3]* C) *(2;3]* D) *(1;3]*

14. a ning qanday qiymatida $P(x) = 2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko'phadning koeffitsiyentlari yig'indisi 7 ga teng bo'ladi?
A) *−1* B) *−4* C) *2* D) *3*

15. $y = \frac{\sqrt{2x-1}+\sqrt{x-1}}{x^2-5x+8}$ funksiyaning aniqlanish sohasini toping.
A) *[1;∞)* B) *[0,5;1]* C) *[0,5;+∞)* D) *(∞;0,5]*

16. Agar $f(x)=7x^2+4x+5$ bo'lsa, f(cosx) ni toping.
A) $7\cos^2 x-4\cos x+5$ B) $12+4\cos x-7\sin^2 x$
C) $2+4\cos x-7\sin^2 x$ D) $7\cos^2 x+4\cos x-5$

17. Agar $f(x) = x^3+2ax^2+3bx+4$ va $f''(2) = 20$ bo'lsa, a ni toping.
A) *1* B) *4* C) *3* D) *2*

18. Agar $\int_a^b (4x+5)dx = 175$ va a+b=10 bo'lsa, b−a ni toping.
A) *6* B) *7* C) *9* D) *2*

19. $\int \frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) *arcsinx+C* B) *0,5arcsinx+C* C) $\arcsin\frac{x}{2}+C$ D) $\frac{1}{2}\arcsin\frac{x}{2}+C$

20. ABCD trapetsiyaning AD va BC asoslari mos ravishda 8 va 4 ga teng. Agar ACD uchburchakning yuzi 12 ga teng bo'lsa, berilgan trapetsiya yuzini toping.
A) *9* B) *18* C) *12* D) *24*

21. To'g'ri burchakli uchburchakda gipotenuza va kichik katetning yig'indisi 27 ga teng. Agar katta katetning uzunligi $9\sqrt{3}$ ga teng bo'lsa, unga tashqi chizilgan aylana uzunligini toping.
A) 81π B) 9π C) 36π D) 18π

22. y = x, y = −x va y = 4 to'g'ri chiziqlar hosil qilgan uchburchak yuzini toping.
A) *1* B) *3* C) *16* D) *4*

23. Kubning dioganalidan ushbu dioganal bilan kesishmaydigan qirrasigacha bo'lgan masofa 4 ga teng. Kubning hajmini toping.
A) $144\sqrt{2}$ B) $240\sqrt{2}$ C) $180\sqrt{2}$ D) $128\sqrt{2}$

24. $a(-2;3)$ va $b(2;n)$ vektorlar berilgan. n ning qanday qiymatida bu vektorlar o'zaro perpendikulyar boladi
A) $\frac{3}{4}$ B) $\frac{4}{3}$ C) $-\frac{3}{4}$ D) $-\frac{4}{3}$

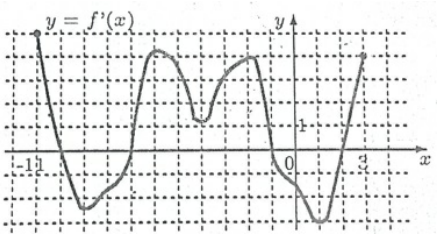
25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;2), C(6;2). ABCD parallelogrammning yuzini toping.
A) *7* B) *5* C) *3* D) *4*

26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. $\{ x/x \in N, -5,1 \le x^2 \le 4,1 \}$ to'plamning nechta qism-to'plamlari mavjud?
A) *32* B) *8* C) *4* D) *16*

28. $\frac{3\cdot2^{x-1}}{2^x-3^x} > 3+(\frac{2}{3})^x$ tengsizlikni yeching.
A) *(0;0,5)* B) *(−1;0)* C) *(−0,5;0)* D) *(0;1)*

29. Chizmada (−11;3) oraliqda aniqlangan f(x) funksiya hosilasining grafigi tasvirlangan. Nechta nuqtada f(x) funksiya grafigiga urinma y = 2x−5 to'g'ri chiziqqa parallel bo'ladi yoki u bilan ustma-ust tushadi.



A) *1* B) *6* C) *0* D) *4*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
DCXCIX = "Norbert Viner axborotni bizni va sezgilarimizni tashqi olamga moslashuvimizdagi mazmunni ifodalash deb qaraydi"
XCVII = "XX asrning 50-yillarida informatika faniga asos solingan"
IV = "Software – bu informatikaning qismi bo'lib, texnik vositalar sifatida qaraladi"
A) *DCCVCI* B) *DCCLXXXV* C) *DCCXCIV* D) *DCCXCV*

32. Ali sakkizlik sanoq sistemasida (73; 100) oraliqdagi bacha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'n ikkilik sanoq sistemasiga o'tkazing.
A) *94* B) *71* C) *7B* D) *A3*

33. Qaysi javobda faqat qobiq dasturlar keltirilgan?
A) *Norton Commander, MS DOS, Volkov Commander*
B) *Vista, DOS3.3, Total Commander*
C) *Linux, Norton Commander* D) *Total Commander, Norton Commander*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo'lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс*
C) *Сумм, Мин* D) *Левсимв, Степень*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda tagchiziqli va og'ma shrift qo'llanilgan?
<table> <tr> <td colspan=2> <b> <a href="#test">
test < / em> < / b > < / a> < / td> < td rowspan=2>
<u> <sup> test < / sup > < / u >
< / strong > </ ul> </td> </tr> <tr> <td> <cite> <u>
<img src=test.jpg> test < /u> </cite> </td> <td> <dl>
<sub> <dd> test </ sub> </dl> </td> </tr> </table>
A) *Birinchi katakda* B) *Ikkinchi katakda*
C) *Uchinchi katakda* D) *To'rtinchi katakda*

36. Paskal tilida quyidagi dastur lavhasi bajarilgach b o'zgaruvchi qiymatini aniqlang: x:=-1; y:=-1; a:=0,1; IF (x*x+y>0) AND (a=1/10) THEN b:=true else b:= false;
A) *1* B) *false* C) *-1* D) *true*

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1. $a+b+c=-2,5$ va $\frac{1}{a+b}+\frac{1}{b+c}+\frac{1}{c+a}=1$ bo'lsa,
$a+b+c-(\frac{c}{a+b}+\frac{a}{b+c}+\frac{b}{c+a})$ ifodaning qiymatini toping.
A) *8* B) *a, b, c ga bog'liq* C) *6* D) *3*

2. To'p 2 m 43 sm balandlikdan tashlandi va yerga urilib, har gal balandligining $\frac{2}{3}$ qismiga teng balandlikka ko'tarildi. To'p necha marta urilishdan keyin 32 sm balandlikka ko'tariladi? (32 sm dan yuqoriga o'tib ketadigan hollarni qaramang.)
A) *5* B) *8* C) *4* D) *7*

3. $a_1, a_2, \ldots$ va $b_1, b_2, \ldots$ – arifmetik progressiyalar uchun $a_1=2, 5$, $b_1=7,5$, $a_{100}+b_{100}=10$ bo'lsin. $a_1+b_1, a_2+b_2, \ldots$ ketma-ketlikning dastlabki 100 ta hadlar yig'indisini toping.
A) *100* B) *1000* C) *0* D) *10*

4. Agar $\cos\left(\frac{\pi}{4}-a\right)=\sqrt{\frac{1}{8}}$ bo'lsa, $\sin 2\alpha$ ning qiymatini toping.
A) *−0,75* B) *0,25* C) *0,75* D) *−0,25*

5. Qandaydir a, b uchun $\cos 4x=a\cos^4 x-8\cos^2 x+b$ ayniyat bajarilsa, a+b ni toping.
A) *−7* B) *3* C) *9* D) *0*

6. Agar $\log_3 25=a$, $\log_{25} 8=b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{ab}{3}$ B) $\frac{1}{3ab}$ C) $\frac{3}{ab}$ D) $\frac{3ab}{2}$

7. $3-4+5-6+\ldots..+2017-2018+2019$ ni hisoblang.
A) *−1011* B) *1010* C) *1011* D) *−1008*

8. $f(x)=\frac{(x-b)(x-c)}{(a-b)(a-c)}+\frac{(x-a)(x-c)}{(b-a)(b-c)}+\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning $x=-2$ dagi hosilasini toping. (Bu yerda $(a-b)(a-c)\neq 0$)
A) *1* B) *a, b, c ga bog'liq* C) *0* D) *2*

9. $\begin{cases}|6+x|\le 10,\\ |2x+7|\ge 15\end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *4* B) *7* C) *6* D) *5*

10. Tenglama ildizlari yig'indisini toping.
$$\frac{2x+1}{x}+\frac{x}{2x+1}=5$$
A) *−0,5* B) *−0,3* C) *−0,4* D) *−0,2*

11. $x\cdot 6^{\log_x 7}\le 42$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *2* B) *0* C) *1* D) *3*

12. $\frac{|x+4|+x}{x+3}\ge 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *4* B) *3* C) *cheksiz ko'p* D) *5*

13. Agar $a<0$ va $b>0$ bo'lsa $ax+a>bx+b$ tengsizlikning eng katta butun yechimini toping.
A) *2* B) *−2* C) *−1* D) *0*

14. a ning qanday qiymatida $P(x)=2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko'phadning koeffitsiyentlari yig'indisi 7 ga teng bo'ladi?
A) *−1* B) *−4* C) *2* D) *3*

15. $y=3-\sqrt{16-\sqrt{4x^2-4\sqrt{3}x+3}}$ funksiyaning qiymatlar sohasiga nechta butun son tegishli?
A) *3 ta* B) *4 ta* C) *7 ta* D) *5 ta*

16. $f(x)=-3x^2+9x+t-3$ funksiyaning maksimumi 5 ga teng. t ning qiymatini toping.
A) *1* B) *1,75* C) *1,25* D) *2*

17. Agar $f(x)=x^3-5x^2+2x+a$ va $f''(2)=f(2)$ bo'lsa, a ning qiymatini toping.
A) *5* B) *6* C) *12* D) *10*

18. $\int_{-1}^{1}(4x^5-4x^3+x+1)dx$ aniq integralni hisoblang.
A) $\frac{7}{3}$ B) *2* C) $\frac{3}{4}$ D) $\frac{5}{24}$

19. $\int e^{\sin x}\cdot\cos x\,dx$ integralni hisoblang.
A) $\frac{e^{\sin x}}{\cos x}+C$ B) $e^{\sin x}+C$ C) $\cos x+e^{\sin x}+C$ D) $-e^{\sin x}+C$

20. ABCD trapetsiyaning AD va BC asoslari mos ravishda 8 va 4 ga teng. Agar ACD uchburchakning yuzi 12 ga teng bo'lsa, berilgan trapetsiya yuzini toping.
A) *9* B) *18* C) *12* D) *24*

21. ABC to'g'ri burchakli uchburchakning katta AC katetini diametr qilib yarim aylana chizilgan. AB kateti 6 ga teng. Yarim aylananing gipotenuzani kesgan nuqtasi bilan A to'g'ri burchakni tutashtiruvchi kesma 4,8 ga teng. Yarim aylana uzunligini toping.
A) *2π* B) *4π* C) *6π* D) *8π*

22. Quyidagi keltirilgan jumlalardan noto'g'risini toping.
A) *Mos tomonlari parallel bo'lgan burchaklar teng bo'ladi.*
B) *Agar mos ikki to'g'ri chiziq va kesuvchi hosil qilgan burchaklar teng bo'lsa, bir tomonli burchaklar yig'indisi 180° ga teng bo'ladi,*
C) *Agar to'g'ri chiziq parallel to'g'ri chiziqlardan biriga perpendikulyar bo'lsa, ikkinchisiga ham perpendikulyar bo'ladi.*
D) *Ikki parallel to'g'ri chiziq va kesuvchi hosil qilgan mos burchaklar o'zaro teng bo'ladi.*

23. Muntazam to'rtburchakli prizma asosining yuzi 16 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $\frac{54}{5}\sqrt{6}$ B) $\frac{68}{5}\sqrt{6}$ C) $\frac{44}{3}\sqrt{6}$ D) $\frac{64}{3}\sqrt{6}$

24. Muntazzam tetraedrning balandligi 2 ga teng bo'lsa, uning to'la sirtini toping.
A) $3\sqrt{3}$ B) $8\sqrt{3}$ C) $6\sqrt{3}$ D) $12\sqrt{3}$

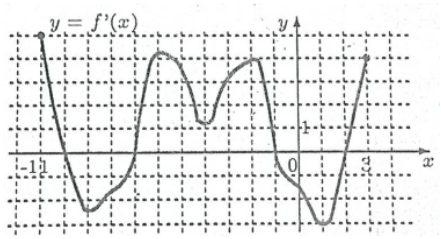
25. ABCD parallelogram uchta uchining koordinatalari ma'lum: A(0;1), B(1;2), C(6;2). ABCD parallelogrammning yuzini toping.
A) *7* B) *5* C) *3* D) *4*

26. Koordinatalari A(−2;0), B(4;0) va C(2;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) *18π* B) *15π* C) *16π* D) *12π*

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko'pi bilan bitta imtihon qo'yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

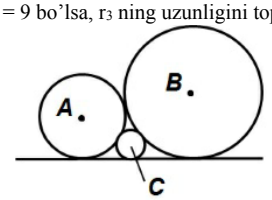
28. $k\ N$ da $B_k=x^k+y^k$ darajali yig'indi, $o_1=x+y$, $o_2=xy$ bo'lsa, u holda quyidagi qaysi munosabat doim o'rinli?
A) $B_3=B_1o_1-B_2o_2$ B) $B_3=B_2o_1-B_1o_2$ C) $B_3=B_2o_2+B_1o_1$ D) $B_3=B_2o_1+B_1o_2$

29. Chizmada $(-11;3)$ oraliqda aniqlangan f(x) funksiya hosilasining grafigi tasvirlangan. Nechta nuqtada f(x) funksiya grafigiga urinma $y=2x-5$ to'g'ri chiziqqa parallel bo'ladi yoki u bilan ustma-ust tushadi.



A) *1* B) *6* C) *0* D) *4*

30. Umumiy urinmaga ega bo'lgan A, B, C markazli aylanalar o'zaro tashqi urinadilar. Ularning radiuslari mos ravishda r_1, r_2 va r_3 bo'lsin. Agar $r_1 = 4$ va $r_2 = 9$ bo'lsa, r_3 ning uzunligini toping.



A) $\frac{49}{36}$ B) $\frac{26}{21}$ C) $\frac{36}{25}$ D) $\frac{32}{23}$

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi:
qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (57; 72) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va ikkilik sanoq sistemasiga o'tkazing.
A) *10000010* B) *1110001* C) *10000111* D) *10110000*

33. A = "MSDOC.SYS – amallar bajarishda yuzaga kelishi mumkin bo'lgan uzilishlarni tahlil qilish modulidir."
B = "Biror nomga ega bo'lgan va kompyuter tashqi xotirasida joylashgan baytlar majmuiga fayl deyiladi."
C = "Brainware – algoritmlarni ishlab chiqish, ularni tuzish usul va ulublarini o'rganish bilan bog'liq yo'nalishdir."
SHu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C and not(A or B)
A) *Ifodada xatolik bor* B) *Rost*
C) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*
D) *Yolg'on*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo'lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс*
C) *Сумм, Мин* D) *Левсимв, Степень*

35. Faylga yo'l berilgan: C: \Mypictures\klass\picture.bmp Bosh katalogni ko'rsating.
A) *my pictures* B) *picture* C) *C:* D) *klass*

36. Paskal. Dastur natijasini aniqlang.
```
Var a,b,c: integer; k:boolean; s:string;
Begin Randomize; S:='INFORMATIKA';
a:=1+random(1); b:=1+trunc(random); k:=true;
while k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(s[a]+s[b]+s[c]); readln; End.
```
A) *NON* B) *IFA* C) *Natijani aniqlab bo'lmaydi* D) *IIF*

4600008

1. Agar $a > 0$ bo'lsa, $y = \frac{a}{|x + a|}$ funksiyaning vertikal asimtotasini toping.
A) $y = 1-a$ B) $x = a$ C) $x = -a$ D) $y = -a$

2. Bir nechta bola 36 dona olmani yeyishmoqchi edi. Ali "Men olmalarni shunday taqsimlay olmanki, har birimizda 5 tadan ko'p olma bo'lmaydi" dedi. Vali esa "Men olmalarni shunday taqsimlay olamanki, xech birimiz olmasiz qolmaymiz va barchamizda olmalar soni turlicha bo'ladi". bolalar sonini aniqlang.
A) *10 ta* B) *11 ta* C) *8 ta* D) *9 ta*

3. $a_1, a_2, \ldots$ va $b_1, b_2, \ldots$ – arifmetik progressiyalar uchun $a_1=2, 5$, $b_1=7,5$, $a_{100}+b_{100}=10$ bo'lsin. $a_1+b_1, a_2+b_2, \ldots$ ketma-ketlikning dastlabki 100 ta hadlar yig'indisini toping.
A) *100* B) *1000* C) *0* D) *10*

4. Agar $tg\alpha=-4$ bo'lsa, $\frac{2\cos 2a - 1}{2 - 9\cos^2 a}$ ning qiymatini toping.
A) *−0,5* B) *−9,5* C) *−3,16* D) *−1,88*

5. Qandaydir a, b, c uchun $\cos 4x = a\cos^4 x + b\cos^2 x + c$ ayniyat bajarilsa, a ni toping.
A) *−8* B) *4* C) *−4* D) *8*

6. Har qanday (x_1, x_2) oraliq uchun $y = f(x)$ funksiya hosilasi manfiy bo'lsin. (x_1, x_2) oraliqqa tegishli ixtiyoriy a va b ($a < b$) uchun qanday tengsizlik o'rinli?
A) $f(b) \geq f(a)$ B) $f(b) > f(a)$ C) $f(b) < f(a)$ D) $f(a) < f(b) < 0$

7. Agar $x = \frac{\sqrt{17} + 1}{2}$ bo'lsa, $\frac{x^3 - 3x^2 + 8x - 2}{x^2 - x + 1}$ kasrning qiymatini hisoblang.
A) $\sqrt{17} + 1$ B) $\sqrt{17}$ C) $\sqrt{17} - 2$ D) $\sqrt{17} - 1$

8. Agar x=2 bo'lsa, $f(x) = \frac{(x-b)(x-c)}{(a-b)(a-c)} + \frac{(x-a)(x-c)}{(b-a)(b-c)} + \frac{(x-a)(x-b)}{(c-a)(c-b)}$ ning qiymatini toping. (Bu yerda $(a-b)(a-c)(b-c) \neq 0$)

A) *2* B) *1* C) *a, b, c ga bog'liq* D) *0*

9. $\begin{cases} EKUB(x,y) = 12 \\ \frac{x}{y} = \frac{3}{4} \end{cases}$ tenglamalar sistemasini yeching. ($x, y \in N$)
A) *(48;60)* B) *(24;36)* C) *(36;48)* D) *(60;72)*

10. Tenglama ildizlari yig'indisini toping.
$$\frac{2x + 1}{x} + \frac{x}{2x + 1} = 5$$
A) *−0,5* B) *−0,3* C) *−0,4* D) *−0,2*

11. $x^{\lg^2 x - 3\lg x + 1} < 1000$ tengsizlikning eng katta natural yechimini toping.
A) *1000* B) *999* C) *1001* D) *99*

12. $\frac{|x + 2| + x}{x + 1} > 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *2* B) *3* C) *1* D) *cheksiz ko'p*

13. Agar $a < 0$ va $b > 0$ bo'lsa, $ax+a > bx+b$ tengsizlikning eng katta butun yechimini toping.
A) *0* B) *−2* C) *2* D) *−1*

14. $P(x) = (3x-1)^{2017} \cdot (2x-1)^{2016} + (4x-3)^2 \cdot (6x-5)^2 + 2$ ko'phad koeffitsiyentlarining yig'indisini toping.
A) $2^{2017}+3$ B) $2^{2017}+1$ C) *9* D) *16*

15. $y = \frac{x^2 + 5}{x}$ funksiyaning qiymatlar sohasini toping.
A) $(-\infty; -2) \cup (2; \infty)$ B) $(-\infty; 0) \cup [2\sqrt{5}; \infty)$
C) $(-\infty; -2\sqrt{5}] \cup [2\sqrt{5}; \infty)$ D) $[2\sqrt{5}; \infty)$

16. Agar $f(x) = \ln e^{2x} - \log_x x^2$ bo'lsa, $f'(2)+f(e)$ ning qiymatini toping.
A) $e+1$ B) $1-e$ C) e D) $2e$

17. Agar $f(x) = x^3+2ax^2+3bx+4$ va $f''(2) = 20$ bo'lsa, a ni toping.
A) *1* B) *4* C) *3* D) *2*

18. Agar $F = \int_4^{x^2}(t^2-8)dt$ bolsa, F'(2) ni toping.
A) *24* B) *32* C) *64* D) *16*

19. $\int\frac{dx}{3+x^2}$ ni hisoblang.
A) $\frac{1}{\sqrt{3}}arctgx + C$ B) $\frac{1}{3}arctg\frac{x}{3} + C$
C) $\frac{1}{\sqrt{3}}arctg\frac{x}{3} + C$ D) $\frac{1}{\sqrt{3}}arctg\frac{x}{\sqrt{3}} + C$

20. Teng yonli trapetsiyaning dioganali o'tkir burchak bissektrisasidir. Trapetsiyaning asoslari uzunliklari 2:3 kabi nisbatda, perimetri esa 12 ga teng. Trapetsiyaning o'rta chizig'ini toping.
A) $\frac{7}{2}$ B) $\frac{10}{3}$ C) $\frac{7}{3}$ D) *3*

21. ABCD to'g'ri to'rtburchak AC dioganali orqali ikkita ABC va ACD uchburchaklarga ajratilgan. Agar AB = 9, AD = 12 bo'lsa, ABC va ACD uchburchaklarga ichki chizilgan aylanalar markazlari orasidagi masofani toping.
A) *6* B) $2\sqrt{5}$ C) *4* D) $3\sqrt{5}$

22. Teng yonli uchburchakning asosiga parallel o'rta chizig'i 7 ga, perimetri esa 30 ga teng. Uning yon tomonining asosiga nisbatini toping.
A) $\frac{4}{7}$ B) $\frac{2}{7}$ C) $\frac{3}{7}$ D) $\frac{1}{7}$

23. Muntazam to'rtburchakli prizma asosining yuzi 36 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $48\sqrt{6}$ B) $30\sqrt{6}$ C) $42\sqrt{6}$ D) $40\sqrt{6}$

24. Asosining tomoni $4\sqrt{3}$ ga va balandligi 8 ga teng bo'lgan uchburchakli muntazam piramidaga tashqi chizilgan sharning radiusini toping.
A) *4* B) *6* C) *5* D) *3*

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;2), C(11;2). ABCD parallelogrammning yuzini toping.
A) *12* B) *6* C) *5* D) *10*

26. Koordinatalari A(2;0), B(8;0) va C(6;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) 18π B) 16π C) 15π D) 12π

27. $\{ x/x\in N, 0 \le x < 5 \}$ to'plamning nechta qism to'plamlari mavjud?
A) *16* B) *4* C) *32* D) *5*

28. $k\in N$ da $B_k=x^k+y^k$ darajali yig'indi, $o_1=x+y$, $o_2=xy$ bo'lsa, u holda quyidagi qaysi munosabat doim o'rinli?
A) $B_3=B_1o_1-B_2o_2$ B) $B_3=B_2o_1-B_1o_2$ C) $B_3=B_2o_2+B_1o_1$ D) $B_3=B_2o_1+B_1o_2$

29. $y = \sin^2x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y = \sin^2(x - m)+n$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(m;n)* B) *N(−m;n)* C) *N(m;−n)* D) *N(−m;−n)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CVCIV="«Axborot» so'zi fransuz tilidagi «informatio» so'zidan kelib chiqqan"
IV="XX asrning 50-yillarida informatika faniga asos solingan"
XIX="Informatika uchun o'rganish obyekti -- bu axborot "
A) *CCXIX* B) *XXIII* C) *CCXVIII* D) *CCXVII*

32. Ali sakkizlik sanoq sistemasida (55;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang.
A) *541* B) *644* C) *353* D) *423*

33. A = "BIOS – ma'lumotlarni kiritish va chiqarish dasturidir."
B = "Shareware – sinovdan o'tkazish muddatiga ega bo'lgan dasturlardir."
C = "Doppix dasturi operatsion sistemadir."
Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
not (A or (not B and C))
A) *Yolg'on* B) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*
C) *Rost* D) *Ifodada xatolik bor*

34. MS Excel.
=?(−23;6) – ЗНАЧЕН(ЗАМЕНИТЕЬ(??(−23;6);2;2;6))
formulaning natijasi 67 bol'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Мин, Мин* B) *Остат, Заменить*
C) *Мин, Макс* D) *Остат, Сцепить*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?
<table> <tr> <td> <cite> <u> test </u>
 </cite> </td> <td colspan=3>
 test </td> </tr> <tr> <td colspan=2>
  test </td>
<td> <u> test </u> </td> <td>
   test </td> </tr> </table>
A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal. Dastur natijasini aniqlang.
Var a, k: integer; s:string;
Begin Randomize; S:='INFORMATIKA';
a:=1; k:=0;
repeat k:=k+trunc((a+random(a))/a);
a:=a+1; until k>5;
Write(s[a]+s[k]+s[a+k]); readln; End.
A) *Dastur ishga tushirilganda xatolik xabari chiqadi*
B) *AM* C) *MOR* D) *MRA*

4600009

1. $\alpha = 30°$, $a = (tg\alpha)^{tg\alpha}$, $b = (ctg\alpha)^{ctg\alpha}$, $c = (ctg\alpha)^{tg\alpha}$ bo'lsa, quyidagilardan qaysi biri o'rinli?
A) $a > b > c$ B) $c > b > a$ C) $b > a > c$ D) $b > c > a$

2. Quti sirtining 70% ini bo'yash uchun 350 gramm bo'yoq sarflandi. Qutining qolgan qismini bo'yash uchun necha gramm bo'yoq kerak bo'ladi?
A) *150* B) *50* C) *100* D) *500*

3. Arifmetik progressiyada 10─hadi 7 ga, 7─hadi esa 10 ga teng. Progressiyaning 13─hadini toping.
A) *4* B) *14* C) *5* D) *13*

4. Hisoblang. $tg^2\left(\arccos\frac{1}{5}\right)-2$
A) *16* B) *24* C) *22* D) *−24*

5. Qandaydir a, b, c uchun $\cos4x=a\cos^4x+b\cos^2x+c$ ayniyat bajarilsa, a ni toping.
A) *−8* B) *4* C) *−4* D) *8*

6. Har qanday (x_1, x_2) oraliqda uchun y = f(x) funksiya hosilasi manfiy bo'lsin. (x_1, x_2) oraliqqa tegishli ixtiyoriy a va b (a < b) uchun qanday tengsizlik o'rinli?
A) $f(b) \ge f(a)$ B) $f(b) > f(a)$ C) $f(b) < f(a)$ D) $f(a) < f(b) < 0$

7. $\log_{\sqrt{6}+\sqrt{5}}(241-44\sqrt{30})$ ni hisoblang.
A) *6* B) *−5* C) *−4* D) *4*

8. $f(x)=a^2\frac{(x-b)(x-c)}{(a-b)(a-c)}+b^2\frac{(x-a)(x-c)}{(b-a)(b-c)}+c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = 2 da hosilasini toping. (Bu yerda (a—b)(a—c)(b—c) ≠ 0)
A) *2* B) *4* C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} x-y=3 \\ \lg x+\lg y=1 \end{cases}$ tenglamalar sistemasining yechimlaridan iborat barcha x va y larning yig'indisini toping.
A) *7* B) *14* C) *10* D) *6*

10. $x^2-(k+1)x+k^2+k-32=0$ tenglama ildizlaridan biri 2 dan katta, ikkinchisi esa 2 dan kichik bo'lsa, k ning butun qiymatlari yig'indisini toping.
A) *6* B) *4* C) *0* D) *5*

11. $x^{\lg^2 x-3\lg x+1}<1000$ tengsizlikning eng katta natural yechimini toping.
A) *1000* B) *999* C) *1001* D) *99*

12. x < 0 da $|x-|x-11||-11$ ifodani modul belgisisiz yozing.
A) *2x* B) *0* C) *2x—22* D) *—2x*

13. Agar a < 0 bo'lsa, $\frac{3}{x}<\frac{1}{a}$ tengsizlikni yeching.
A) *3a < x < 0* B) *x < 3a* C) *0 < x < 3a* D) *x > 3a*

14. a ning qanday qiymatida $P(x)=2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko'phadning koeffitsiyentlari yig'indisi 7 ga teng bo'ladi?
A) *—1* B) *—4* C) *2* D) *3*

15. $y=\frac{5}{x^2+5}$ funksiyaning qiymatlar sohasiga kirmaydigan eng katta manfiy butun sonni toping.
A) *−1* B) *−4* C) *−3* D) *−2*

16. Agar $f(x)=\ln\epsilon^x-\log_x x^2$ bo'lsa, f '(1)+f(e) ning qiymatini toping.
A) *e* B) *e—2* C) *—2* D) *e—1*

17. Agar $f(x)=x^3+2ax^2+3bx+4$ va f "(2) = 20 bo'lsa, a ni toping.
A) *1* B) *4* C) *3* D) *2*

18. $\int_{-1}^{1}(x^5-4x^3+4x)dx$ aniq integralni hisoblang.
A) $\frac{5}{24}$ B) $\frac{7}{3}$ C) $\frac{3}{4}$ D) *0*

19. Ushbu $f(x)=\frac{2x-1}{x^2-x-6}$ funksiyaning boshlang'ich funksiyasini toping.
A) *ln|x+2|+C* B) *ln(|x—3|•|x+2|)+C* C) *ln(x—3)+C* D) $\frac{2x^2}{x-3}+C$

20. Diagonallari 90° burchak ostida kesishuvchi ABCD trapetsiyaning asoslari mos ravishda 8 va 2 ga teng. Dioganallarining kesishish nuqtasidan asoslariga parallel to'g'ri chiziq o'tkazilgan. Ushbu to'g'ri chiziqning yon tomonlar bilan chegaralangan kesmasi uzunligini toping.
A) *3,2* B) *1,6* C) *1,8* D) *3,25*

21. ABCD to'rtburchak aylanaga ichki chizilgan. ABC uchburchak 110° ga, CAD burchak 64° ga teng bo'lsa, ABD burchakning gradus o'lchovini toping.
A) *36°* B) *44°* C) *46°* D) *22°*

22. Teng yonli uchburchakning asosiga parallel o'rta chizig'i 7 ga, perimetri esa 30 ga teng. Uning yon tomonining asosiga nisbatini toping.
A) $\frac{4}{7}$ B) $\frac{2}{7}$ C) $\frac{3}{7}$ D) $\frac{1}{7}$

23. Kubning dioganalidan ushbu dioganal bilan kesishmaydigan qirrasigacha bo'lgan masofa 4 ga teng. Kubning hajmini toping.
A) $144\sqrt{2}$ B) $240\sqrt{2}$ C) $180\sqrt{2}$ D) $128\sqrt{2}$

24. Piramida asosining tomoni $2\sqrt{3}$ va o'tkir burchagi 60° ga teng bo'lgan rombdan iborat. Ushbu piramidaga ichki chizilgan konusning yasovchisi asos tekisligi bilan 60° li burchak tashkil etadi. Konusning hajmini toping.
A) $\frac{9\sqrt{3}\pi}{8}$ B) $\frac{27\pi}{8}$ C) *3π* D) *6π*

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(9;3). ABCD parallelogramm yuzini toping.
A) *14* B) *16* C) *25* D) *24*

26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. { x/xϵ N, 0 ≤ x < 5 } to'plamning nechta qism to'plamlari mavjud?
A) *16* B) *4* C) *32* D) *5*

28. $\frac{2^x-3^x}{3\cdot 2^{x-1}}>3+(\frac{2}{3})^x$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *1* B) *2* C) *3* D) *0*

29. $y=\sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x+a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(a;—b)* B) *N(—a;b)* C) *N(a;b)* D) *N(b;a)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi: qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (57; 72) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va ikkilik sanoq sistemasiga o'tkazing.
A) *10000010* B) *1110001* C) *10000111* D) *10110000*

33. Informatika o'rganadigan asosiy ashyoni aniqlang.
A) *algoritm* B) *dastur* C) *kompyuter* D) *axborot*

34. MS Excel.=?(-23;6)-ЗНАЧЕН(ЗАМЕНИТЬ??(-23;6);2;2;6)) formulaning natijasi 67 bo'lishi uchun? va ?? belgilarini o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Остат, Заменить* B) *Остат, Сцепить* C) *Мин* D) *Мин, Макс*

35. Faylga yo'l berilgan: C: \Mypictures\klass\picture.bmp Bosh katalogni ko'rsating.
A) *my pictures* B) *picture* C) *C:* D) *klass*

36. Paskal. Dastur natijasini aniqlang.
```
Var a, b, c:  integer; k:boolean;
Begin Randomize; a:=1+random(1);
b:=1+trunc(random); k:=true;
While k Do begin c:=a+b; a:=c mod a+1;
```

b:=c div b; if a=b then k:=false; end;
Write(a+b+c,k); readln; End.
A) *5FALSE* B) *8TRUE* C) *Natijani aniqlab bo'lmaydi* D) *8FALSE*

4600010

1. $\left(\frac{\sqrt{y}-\sqrt{x}}{y-\sqrt{xy}+x}+\frac{x}{x\sqrt{x}+y\sqrt{y}}\right)\cdot\frac{x\sqrt{x}+y\sqrt{y}}{y}$ ni soddalashtiring.
A) *2* B) *1* C) *4* D) *3*

2. Axborot-resurs markazida 15 ta kompyuter o'rnatilmoqda, bunda ayrimlari kabel bilan ulanmoqda. Har bir kompyuterdan 4 ta kabel chiqishi lozim bo'lsa, jami bo'lib nechta kabel kerak?
A) *40* B) *30* C) *60* D) *24*

3. Agar $\begin{matrix} x_2+x_3+\ldots+x_{11}+x_{12}=1 \\ x_1+x_3+\ldots+x_{11}+x_{12}=2 \\ \cdots\cdots\cdots\cdots\cdots\cdots \\ x_1+x_2+x_3+\ldots+x_{11}=12 \end{matrix}$ bo'lsa, x_{11} nechaga teng?
A) $-\frac{43}{11}$ B) $-\frac{54}{11}$ C) $-\frac{78}{11}$ D) $-\frac{73}{10}$

4. $2\sin^2\alpha-1$ ifodani ko'paytma ko'rinishiga keltiring.
A) $-2\sin(45°-\alpha)\cdot\sin(\alpha+45°)$ B) $-4\sin(45°-\alpha)\cdot\sin(\alpha+45°)$
C) $2\cos(\alpha-30°)\cdot\sin(\alpha+30°)$ D) $2\sin(\alpha-30°)\cdot\cos(\alpha+30°)$

5. Agar barcha x, y lar uchun $x^3+4x^2y+axy^2+3xy-bx^cy+7xy^2+dxy+y^2=x^3+y^2$ tenglik bajarilsa, $|a+b+c|\cdot(a-b)$ ni toping.
A) -11 B) 2 C) -3 D) -1

6. Agar $\log_3 25=a$, $\log_{25}8=b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{ab}{3}$ B) $\frac{1}{3ab}$ C) $\frac{3}{ab}$ D) $\frac{3ab}{2}$

7. $3-4+5-6+\ldots..+2017-2018+2019$ ni hisoblang.
A) -1011 B) *1010* C) *1011* D) -1008

8. $f(x)=a^2\frac{(x-b)(x-c)}{(a-b)(a-c)}+b^2\frac{(x-a)(x-c)}{(b-a)(b-c)}+c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning $x=-1$ da hosilasini toping. (Bu yerda $(a-b)(a-c)(b-c)\neq 0$)
A) -2 B) -1 C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases}|5+x|\le 9\\|2x+5|\ge 13\end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *7* B) *4* C) *6* D) *5*

10. $(x^2-9x+16)^2-9(x^2-9x+16)+16=x$ tenglamaning butun ildizlari nechta?
A) *3* B) *butun ildizi yo'q* C) *2* D) *1*

11. $\log_2 10\cdot\lg 2$ dan kichik bo'lgan natural sonlar nechta?
A) *2* B) *3* C) *0* D) *1*

12. $\frac{|x+4|+x}{x+3}\ge 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *5* B) *3* C) *4* D) *cheksiz ko'p*

13. Nomanfiy x, y sonlar uchun $a=\frac{x+y}{2}$ va $b=\sqrt{xy}$ bo'lsin. Qaysi tengsizlik har doim o'rinli?
A) $a<b$ B) $a\le b$ C) $a\ge b$ D) $a>b$

14. $(a+b)^5$ ko'phadni standart ko'rinishga keltiring va koeffitsiyentlar yig'indisini toping.
A) *32* B) *64* C) *16* D) *34*

15. $y=\frac{|x^2-x-12|}{\sqrt{11x-x^2-18}}$ funksiyaning aniqlanish sohasini toping.
A) *(2;9)* B) *(4;9)* C) *(2;4]* D) *(−3;9)*

16. Agar $f(x)=\ln e^{2x}+\log_x x^2$ bo'lsa, $f'(2)+f(e)$ ning qiymatini toping.
A) *2e+1* B) *4+2e* C) *2+e* D) *4+e*

17. Agar $f(x)=x^3-5x^2+x+a$ va $f''(2)=f(1)$ bo'lsa, a ni toping.
A) *6* B) *10* C) *12* D) *5*

18. $\int_{-1}^{1}(x^5-4x^3+4x)dx$ aniq integralni hisoblang.
A) $\frac{5}{24}$ B) $\frac{7}{3}$ C) $\frac{3}{4}$ D) *0*

19. $\int e^{\sin x}\cdot\cos x\,dx$ integralni hisoblang.
A) $\frac{e^{2\sin x}}{\cos x}+C$ B) $e^{\sin x}+C$ C) $\cos x+e^{\sin x}+C$ D) $-e^{\sin x}+C$

20. O'tkir burchagi 45° ga, balandligi va katta asosining yigindisi a ga teng yonli trapetsiyalar ichida eng katta yuzaga ega bo'lganining kichik asosini toping.
A) $\frac{3a}{4}$ B) $\frac{5a}{4}$ C) $\frac{7a}{4}$ D) $\frac{a}{4}$

21. Balandligi 3 ga va asosining radiusi 1 ga teng bo'lgan konus sharga ichki chizilgan. Shar sirtining yuzini toping.
A) $12\frac{1}{9}\pi$ B) $12\frac{2}{3}\pi$ C) $11\frac{1}{9}\pi$ D) $11\frac{2}{9}\pi$

22. ABC uchburchakda AD mediana va BE bissektrisa o'tkazilgan. Agar BE bissektrisa AD medianani asosidan boshlab hisoblaganda 3 : 8 nisbatda bo'lsa, u holda AC tomonni qanday nisbatda bo'ladi?
A) *3 : 4* B) *3 : 2* C) *3 : 16* D) *3 : 5*

23. Muntazam to'rtburchakli prizma asosining yuzi 36 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $48\sqrt{6}$ B) $30\sqrt{6}$ C) $42\sqrt{6}$ D) $40\sqrt{6}$

24. $a(-2;3)$ va $b(2;n)$ vektorlar berilgan. n ning qanday qiymatida bu vektorlar o'zaro perpendikulyar boladi
A) $\frac{3}{4}$ B) $\frac{4}{3}$ C) $-\frac{3}{4}$ D) $\frac{4}{3}$

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to'rtburchak yuzi 24 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *36* B) *33* C) *48* D) *34*

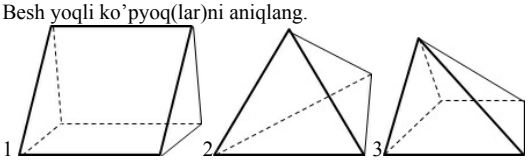
26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. $\{x/x\in N, x^2<32\}$ to'plamni nechta usul bilan ikkita kesishmaydigan qism to'plamlar birlashmasi ko'rinishida ifodalash mumkin?
A) *5* B) *31* C) *32* D) *16*

28. $\frac{2^{x-1}-1}{2^{x-1}+1}<2$ tengsizlikni yeching.
A) $(-\infty;0)$ B) $(0;\infty)$ C) $(-\infty;\infty)$ D) $\varnothing$

29. $y=\sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x-m)+n$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(m;n)* B) *N(−m;n)* C) *N(m;−n)* D) *N(−m;−n)*

30. Besh yoqli ko'pyoq(lar)ni aniqlang.



A) *1, 3* B) *1* C) *3* D) *2*

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi:
qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. 240, 301, 220, 332 butun sonlarni barchasini yozish mumkin bo'lgan eng kichik asosli sanoq sistemasida shu sonlar yig'indisini aniqlang.
A) *2143* B) *1535* C) *3013* D) *1423*

33. A = "MSDOC.SYS – amallar bajarishda yuzaga kelishi mumkin bo'lgan uzilishlarni tahlil qilish modulidir."
B = "Biror nomga ega bo'lgan va kompyuter tashqi xotirasida joylashgan baytlar majmuiga fayl deyiladi."
C = "Brainware – algoritmlarni ishlab chiqish, ularni tuzish usul va ulublarini o'rganish bilan bog'liq yo'nalishdir."
Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C and not(A or B)
A) *Ifodada xatolik bor* B) *Rost*
C) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi* D) *Yolg'on*

34. MS Excel. A1=5; A2=4; A3=6; B1=4; B2=7; B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Мин*
C) *Счётесли, Макс* D) *Счётесли, Степень*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?
<table> <tr> <td> <cite> <u> test </u>
 </cite> </td> <td colspan=3>
 test </td> </tr> <tr> <td colspan=2>
  test </td>
<td> <u> test </u> </td> <td>
   test </td> </tr> </table>
A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal. Dastur natijasini aniqlang.
```
Var p,k: longint; s:string;
F:array[1..11] of integer;
Begin Randomize; S:='INFORMATIKA';
P:=1; k:=0; repeat k:=k+1;
F[k]:=round((k+random(k))/(k+1.1));
P:=p*F[k]; until k>=6;
Write(s[p+2]+s[f[3]]+s[k]); readln; End.
```
A) *Natijani aniqlab bo'lmaydi* B) *NMO* C) *NIM* D) *OIM*

4600011

1. m > 0, n < 0 haqiqiy sonlar uchun qanday munosabat doimo o'rinli?
A) $|mn| < -|m|*|n|$ B) $|m+n| \le m-n$ C) $|m+n| \ge m-n$ D) $|m+n| < m+n$

2. Maktab hovlisida 986 ta atirgul ekilgan. Samandar barcha atirgullarning yarmini, Diyora ham barcha atirgullarning yarmini suv quyib sug'ordi. Bunda aynan uchta atirgul ham Diyora, ham Samandar tomonidan sug'orilganligi aniqlandi. Nechta atirgul sug'orilmay qoldi?
A) *6* B) *1* C) *0* D) *3*

3. Arifmetik progressiyada 10−hadi 7 ga, 7−hadi esa 10 ga teng. Progressiyaning 12−hadini toping.
A) *13* B) *6* C) *14* D) *5*

4. $\frac{tg(a+\beta)-tga-tg\beta}{tg\beta \cdot tg(a+\beta)}$ ifodaning son qiymatini toping, bu yerda $a = \frac{2\pi}{3}$, $\beta = \frac{3\pi}{5}$.
A) $-\sqrt{3}$ B) *1* C) *−1* D) $\sqrt{3}$

5. a, b manfiy butun sonlar uchun a=b+5 va a+b−c=13 bo'lsa, c ning eng katta qiymatini toping.
A) *−17* B) *−18* C) *−19* D) *−20*

6. Agar $\log_3 25 = a$, $\log_{25} 8 = b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{ab}{3}$ B) $\frac{1}{3ab}$ C) $\frac{3}{ab}$ D) $\frac{3ab}{2}$

7. $\frac{2^5 \cdot 11^8}{22^{10}} \cdot \frac{34^4 \cdot 2057}{17^5}$ ni hisoblang.
A) $\frac{1}{2}$ B) $\frac{2}{187}$ C) $\frac{1}{34}$ D) *2*

8. Agar x=2 bo'lsa, $f(x) = \frac{(x-b)(x-c)}{(a-b)(a-c)} + \frac{(x-a)(x-c)}{(b-a)(b-c)} + \frac{(x-a)(x-b)}{(c-a)(c-b)}$ ning qiymatini toping. (Bu yerda (a−b)(a−c)(b−c)≠0)
A) *2* B) *1* C) *a, b, c ga bog'liq* D) *0*

9. $\begin{cases} y-x=3 \\ y-z=4 \\ x^2+y^2+z^2=30 \end{cases}$ tenglamalar sistemasini yeching.
A) *(3;1;4), (−2/3; −5/3; −1/3)* B) *(−3,3; −0,3; −4,3), (2;5;1)*
C) *(−10/3; −1/3; −13/3), (2;5;1)* D) *(1;4;0), (2;5;1)*

10. $(a^2+b^2+9)x^2+2(a+b+3)x+3=0$ tenglama haqiqiy yechimlarga ega bo'lsa, 3a−b ni toping.
A) *3* B) *−4* C) *−3* D) *6*

11. $x^{\lg^2 x - 4\lg x + 1} > 10000$ tengsizlikning eng kichik natural yechimini toping.
A) *10001* B) *100* C) *10000* D) *1001*

12. x < 0 da |x−|x−11||−11 ifodani modul belgisisiz yozing.
A) *2x* B) *0* C) *2x−22* D) *−2x*

13. x < 2 bo'lsa, 3x + 2y − 6 = 0 tenglamadan y ning qiymatlarini toping.
A) *y > −2* B) *y < −2* C) *y > 0* D) *−1 < y < 1*

14. $(a+b)^5$ ko'phadni standart ko'rinishga keltiring va koeffitsiyentlar yig'indisini toping.
A) *32* B) *64* C) *16* D) *34*

15. $y = \frac{|x^2-x-12|}{\sqrt{11x-x^2-18}}$ funksiyaning aniqlanish sohasini toping.
A) *(2;9)* B) *(4;9)* C) *(2;4]* D) *(−3;9)*

16. Moddiy nuqta to'g'ri chiziq bo'ylab $x(t) = 0{,}5t^3-3t^2+2t+2$ qonun bo'yicha harakatlanmoqda, bu yerda x – koordinatalar boshidan nuqtagacha bo'lgan masofa (metrlarda o'lchanadi), t – vaqt(sekundlarda o'lchanadi). t = 6 sekund bo'lganda nuqtaning tezligini (m/s) toping.
A) *23* B) *20* C) *12* D) *0*

17. Agar $f(x) = x^3+2ax^2+3bx+8$ va $f''(3) = 22$ bo'lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. $\int_1^8 \frac{4}{x} dx$ integralni hisoblang.
A) *18ln2* B) *12ln2* C) *6ln2* D) *12ln4*

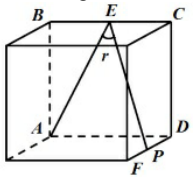
19. Ushbu $f(x)=\frac{2x-1}{x^2-x-6}$ funksiyaning boshlang'ich funksiyasini toping.
A) $ln|x+2|+C$ B) $ln(|x-3|\cdot|x+2|)+C$ C) $ln(x-3)+C$ D) $\frac{2x^2}{x-3}+C$

20. Teng yonli ABCD trapetsiyada AC dioganal CD tomonga perpendikulyar. Agar AD = 4, $|AB|^2+|BC|^2=11$ bo'lsa, |AB| ni toping.
A) *3* B) $\sqrt{2}$ C) *2* D) $\frac{3}{2}$

21. ABC to'g'ri burchakli uchburchakning katta AC katetini diametr qilib yarim aylana chizilgan. AB kateti 6 ga teng. Yarim aylananing gipotenuzani kesgan nuqtasi bilan A to'g'ri burchakni tutashtiruvchi kesma 4,8 ga teng. Yarim aylana uzunligini toping.
A) 2π B) 4π C) 6π D) 8π

22. AB kesmaning bir tomonida $AA_1=5$ va $BB_1=3$ perpendikulyar o'tkazilgan. A_1B va AB_1 to'g'ri chiziqlarning kesishish nuqtasidan AB kesmagacha bo'lgan masofani toping.
A) $\frac{15}{8}$ B) $\frac{7}{5}$ C) $\frac{13}{8}$ D) $\frac{9}{8}$

23. Shaklda berilgan kub uchun BE = EC, FP = PD bo'lsa, cosx ni toping.



A) $\frac{10\sqrt{3}}{33}$ B) $\frac{\sqrt{30}}{10}$ C) $\frac{\sqrt{10}}{30}$ D) $\frac{\sqrt{30}}{30}$

24. $a(2;3;4)$ va $b(1;3;4)$ vektorlar berilgan. $c=2a+b$ vektorning uzunligini toping.
A) $\sqrt{280}$ B) $\sqrt{250}$ C) $\sqrt{310}$ D) $\sqrt{220}$

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(14;3). D uchining absissasi va ordinatasining yig'indisini toping.
A) *0* B) *5* C) *14* D) *15*

26. Koordinatalari A(2;0), B(8;0) va C(6;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) 12π B) 15π C) 16π D) 18π

27. 12 nafar o'quvchilardan iborat guruhda 4 nafar a'zodan tashkil topgan qo'mitani tanlab olish kerak. Bu ishni nechta usulda amalga oshirsa bo'ladi?
A) *48* B) *84* C) *495* D) *120*

28. $\frac{5^x}{5^x-4^x}<5$ tengsizlikning eng katta butun manfiy va eng kichik butun musbat yechimlari yig'indisini toping.
A) -1 B) *1* C) *2* D) -3

29. $y=\sin^2x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x-m)+n$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) $N(m;n)$ B) $N(-m;n)$ C) $N(m;-n)$ D) $N(-m;-n)$

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (73; 100) oraliqdagi bacha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'n ikkilik sanoq sistemasiga o'tkazing.
A) *94* B) *71* C) *7B* D) *A3*

33. Raqamli signalni analogli signalga va aksinchaga aylantirib beruvchi qurilma nomini toping.
A) *deshifrator* B) *telefaks* C) *modem* D) *shifrator*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo'lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс* C) *Сумм, Мин* D) *Левсимв, Степень*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?
<table> <tr> <td> <cite> <u> test </u>
 </cite> </td> <td colspan=3>
 test </td> </tr> <tr> <td colspan=2>
  test </td>
<td> <u> test </u> </td> <td>
   test </td> </tr> </table>
A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal. Dastur natijasini aniqlang.
```
Var p,k: longint; s:string;
F:array[1..11] of integer;
Begin Randomize; S:='INFORMATIKA';
P:=1; k:=0; repeat k:=k+1;
F[k]:=round((k+random(k))/(k+1.1));
P:=p*F[k]; until k>=6;
Write(s[p+2]+s[f[3]]+s[k]); readln; End.
```
A) *Natijani aniqlab bo'lmaydi* B) *NMO* C) *NIM* D) *OIM*

4600012

1. a va b natural sonlarning EKUK i 72 ga, EKUB i 12 ga teng bo'lsa, ularning ko'paytmasini toping.
A) *480* B) *360* C) *864* D) *960*

2. Axborot-resurs markazida 15 ta kompyuter o'rnatilmoqda, bunda ayrimlari kabel bilan ulanmoqda. Har bir kompyuterdan 4 ta kabel chiqishi lozim bo'lsa, jami bo'lib nechta kabel kerak?
A) *40* B) *30* C) *60* D) *24*

3. $a_1, a_2, \ldots$ va $b_1, b_2, \ldots$ – arifmetik progressiyalar uchun $a_1=2$, 5, $b_1=7{,}5$, $a_{100}+b_{100}=10$ bo'lsin. a_1+b_1, $a_2+b_2, \ldots$ ketma-ketlikning dastlabki 100 ta hadlar yig'indisini toping.
A) *100* B) *1000* C) *0* D) *10*

4. $\frac{tg(a+b)-tga-tgb}{tgb\cdot tg(a+b)}$ ifodaning son qiymatini toping, bu yerda $a=\frac{2\pi}{3}$, $b=\frac{3\pi}{5}$.
A) *1* B) -1 C) $-\sqrt{3}$ D) $\sqrt{3}$

5. Agar barcha x, y lar uchun $x^3+4x^2y+axy^2+3xy-bx^cy+7xy^2+dxy+y^2=x^3+y^2$ tenglik bajarilsa, b−c−d ni toping.
A) *2* B) -4 C) *5* D) -2

6. Agar $\log_3 25=a$, $\log_{25} 8=b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.

A) $\frac{3}{ab}$ B) $\frac{ab}{3}$ C) $\frac{3ab}{2}$ D) $\frac{1}{3ab}$

7. $\frac{2^5\cdot 11^8}{22^{10}}:\frac{34^4\cdot 2057}{17^5}$ ni hisoblang.
A) $\frac{1}{2}$ B) $\frac{2}{187}$ C) $\frac{1}{34}$ D) *2*

8. Agar x = 3 bo'lsa, $f(x)=\frac{(x-b)(x-c)}{(a-b)(a-c)}+\frac{(x-a)(x-c)}{(b-a)(b-c)}+\frac{(x-a)(x-b)}{(c-a)(c-b)}$ ning qiymatini toping. (Bu yerda (a─b)(a─c)(b─c)≠0)
A) *2* B) *1* C) *a, b, c ga bog'liq* D) *0*

9. $\begin{cases} x+y=7 \\ \lg x+\lg y=1 \end{cases}$ tenglamalar sistemasining yechimlaridan iborat barcha x va y larning yig'indisini toping.
A) *20* B) *14* C) *7* D) *12*

10. Tenglama ildizlari yig'indisini toping.
$$\frac{2x+1}{x}+\frac{x}{2x+1}=5$$
A) *−0,5* B) *−0,3* C) *−0,4* D) *−0,2*

11. $x^{\lg^2 x-3\lg x+1}<1000$ tengsizlikning eng katta natural yechimini toping.
A) *1000* B) *999* C) *1001* D) *99*

12. $\frac{|x+2|+x}{x+1}>1$ tengsizlikning manfiy butun yechimlari nechta?
A) *2* B) *3* C) *1* D) *cheksiz ko'p*

13. $x^6-28x^3+27\le 0$ tengsizlik nechta butun yechimga ega?
A) *1* B) *3* C) *27* D) *cheksiz ko'p*

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2\cdot(3x+2)^3\cdot(x-1)^{202}+(x-1)^{2000}+17$
A) *17* B) *26* C) *33* D) *−9*

15. $y=3-\sqrt{16-\sqrt{4x^2-4\sqrt{3}x+3}}$ funksiyaning qiymatlar sohasiga nechta butun son tegishli?
A) *3 ta* B) *4 ta* C) *7 ta* D) *5 ta*

16. Agar $f(x)=\ln(2x+\sqrt{x^2+1})$ bo'lsa, f '(0) ni toping.
A) *4* B) *2* C) *0* D) *3*

17. Agar $f(x)=x^3-5x^2+x+a$ va f "(2) = f (1) bo'lsa, a ni toping.
A) *6* B) *10* C) *12* D) *5*

18. $y=\sin\frac{x}{2}$; y=0; $x=\frac{\pi}{2}$; x=π chiziqlar bilan chegaralangan shaklning yuzini toping.
A) $\frac{\sqrt{2}}{2}$ B) *2* C) $\frac{3}{2}$ D) $\sqrt{2}$

19. $y=-2\sqrt{x}$ va $y=-2x^3$ egri chiziqlar bilan chegaralangan soha yuzini toping.
A) $\frac{5}{3}$ B) $\frac{5}{6}$ C) $\frac{5}{4}$ D) $\frac{5}{12}$

20. Teng yonli trapetsiyaning dioganali o'tkir burchak bissektrisasidir. Trapetsiyaning asoslari uzunliklari 2:3 kabi nisbatda, perimetri esa 12 ga teng. Trapetsiyaning o'rta chizig'ini toping.
A) *3,5* B) $\frac{10}{3}$ C) $\frac{7}{3}$ D) *3*

21. Konusning yasovchisi $4\sqrt{3}$ ga teng. Konusning uchida unga ichki chizilgan shar markazigacha bo'lgan masofa 4 ga teng. Konusning yasovchisi va asos tekisligi orasidagi burchakni toping.
A) $\frac{\pi}{4}$ B) $2\operatorname{arctg}\frac{1}{3}$ C) *2arctg3* D) $\frac{\pi}{3}$

22. Uchburchakning 2 ta tomoni 5 va 6 ga, ular orasidagi burchak kosinusi esa $\frac{5}{6}$ ga teng. Uchburchakning 3 – tomoniga tushirilgan balandligini toping.
A) *4* B) *5* C) *6* D) *8*

23. Muntazam to'rtburchakli prizma asosining yuzi 36 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $48\sqrt{6}$ B) $30\sqrt{6}$ C) $42\sqrt{6}$ D) $40\sqrt{6}$

24. Asosining tomoni $4\sqrt{3}$ ga va balandligi 8 ga teng bo'lgan uchburchakli muntazam piramidaga tashqi chizilgan sharning radiusini toping.
A) *4* B) *6* C) *5* D) *3*

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(9;3). ABCD parallelogramm yuzini toping.
A) *14* B) *16* C) *25* D) *24*

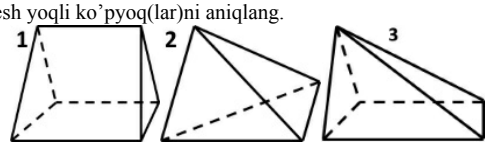
26. Koordinatalari A(2;0), B(8;0) va C(4;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) *18π* B) *16π* C) *15π* D) *12π*

27. Bir kunlik dars jadvalida turli fanlar bo'yicha 4 ta dars bor. 9 ta fandan iborat bo'lgan shunday jadvallar sonini toping.
A) *3024* B) *126* C) *4940* D) *504*

28. $\frac{5^x}{5^x-4^x}<5$ tengsizlikning eng katta butun manfiy va eng kichik butun musbat yechimlari yig'indisini toping.
A) *−1* B) *1* C) *2* D) *−3*

29. $y=\sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x-m)+n$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(m;n)* B) *N(−m;n)* C) *N(m;−n)* D) *N(−m;−n)*

30. Besh yoqli ko'pyoq(lar)ni aniqlang.



A) *1, 3* B) *1* C) *3* D) *2*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami , so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'nbeshlik sanoq sistemasiga o'tkazing.
A) *7B* B) *83* C) *67* D) *58*

33. A="Boot Record─buyruq protsessoridir." B="Freeware─mutloqo bepul, birlamchi kodi ochiq dasturiy ta'minotdir."
C=''Paradox─operatsion sistemadir." Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C or not (B or not A)
A) *Rost* B) *Yolg'on* C) *Ifodada xatolik bor*

D) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo'lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс*
C) *Сумм, Мин* D) *Левсимв, Степень*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda tagchiziqli va og'ma shrift qo'llanilgan?
<table> <tr> <td colspan=2> <b> <a href="#test">
test < / em> < / b > < / a> < / td> < td rowspan=2>
<u> <sup> test < / sup > < / u >
< / strong > </ ul> </td> </tr> <tr> <td> <cite> <u>
<img src=test.jpg> test < /u> </cite> </td> <td> <dl>
<sub> <dd> test </ sub> </dl> </td> </tr> </table>
A) *Birinchi katakda* B) *Ikkinchi katakda*
C) *Uchinchi katakda* D) *To'rtinchi katakda*

36. Paskal. Quyidagi dastur natijasini aniqlang. vara, b, c: integer;
Begin a : =30; b := 6; a := a *b;
if a > b then c : = a+4 * b else c : =a-4 * b;
write(c; 1); end.
A) *114* B) *Kompilyatsiyada xatolik xabari chiqadi* C) *204* D) *6*

4600013

1. $y = \ln(\sin^2 2x+\cos^2 2x)$ funksiyaning eng kichik musbat davrini toping.
A) π B) $\frac{\pi}{2}$ C) 2π D) *mavjud emas*

2. Bir nechta matematiklar va 8 nafar fiziklardan tashkil topgan bir guruh olimlarning o'rtacha yoshi 40 ga teng. Matematiklarning o'rtacha yoshi 35 ga, fiziklarning o'rtacha yoshi esa 50 ga tengligi ma'lum bo'lsa, matematiklar sonini toping.
A) *14* B) *20* C) *18* D) *16*

3. Musbat sonlardan tashkil topgan $a_1, a_2, a_3, \ldots$ ketma–ketlik uchun $a_1=a_2=1$ va barcha natural n larda $a_{n+2}=a_n \cdot a_{n+1}$ shartlar bajarilsin. Ketma–ketlikning 90–hadini toping.
A) *1* B) *10* C) *0* D) *1050*

4. $\frac{tg(a+b)-tga-tgb}{tgb \cdot tg(a+b)}$ ifodaning son qiymatini toping, bu yerda $a=\frac{2\pi}{3}$, $b=\frac{3\pi}{5}$.
A) *1* B) *−1* C) $-\sqrt{3}$ D) $\sqrt{3}$

5. a, b manfiy butun sonlar uchun a=b+5 va a+b–c=13 bo'lsa, c ning eng katta qiymatini toping.
A) *−17* B) *−18* C) *−19* D) *−20*

6. y = f(x) funksiya D to'plamda noqat'iy o'suvchi bo'lsin. D to'plamdan olingan ixtiyoriy a, b elementlari uchun (a > b) quyidagi munosabatlardan qaysi biri o'rinli?
A) $f(b) \le f(a)$ B) $f(a) < f(b)$ C) $f(b) = f(a)$ D) $f(a) \le f(b)$

7. $\log_{\sqrt{6}+\sqrt{5}}(241-44\sqrt{30})$ ni hisoblang.
A) *6* B) *−5* C) *−4* D) *4*

8. $f(x) = a^2\frac{(x-b)(x-c)}{(a-b)(a-c)} + b^2\frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = 2 da hosilasini toping. (Bu yerda $(a-b)(a-c)(b-c) \neq 0$)
A) *2* B) *4* C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} y-x=3 \\ y-z=4 \\ x^2+y^2+z^2=30 \end{cases}$ tenglamalar sistemasini yeching.
A) *(3;1;4), (−2/3; −5/3; −1/3)* B) *(−3,3; −0,3; −4,3), (2;5;1)*
C) *(−10/3; −1/3; −13/3), (2;5;1)* D) *(1;4;0), (2;5;1)*

10. $x^2-11x+9=0$ tenglamaning ildizlari x_1 va x_2 bolsa, $(\sqrt{x_1}-\sqrt{x_2})$ ning qiymatini toping.
A) $2\sqrt{5}$ B) *5* C) $\sqrt{5}$ D) *2,5*

11. $x \cdot 2^{\log_3 x} < 6$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *1* B) *3* C) *0* D) *2*

12. $\left|\frac{x^2-5x+4}{x^2-4}\right| \le 1$ tengsizlikni qanoatlantirmaydigan tub sonni toping.
A) *7* B) *5* C) *2* D) *3*

13. Agar a < 0 va b > 0 bo'lsa ax+a > bx+b tengsizlikning eng katta butun yechimini toping.
A) *2* B) *−2* C) *−1* D) *0*

14. a ning qanday qiymatida $P(x) = 2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko'phadning koeffitsiyentlari yig'indisi 7 ga teng bo'ladi?
A) *−1* B) *−4* C) *2* D) *3*

15. [1,10] kesmada berilgan f(x) funksiyaning eng katta va eng kichik qiymatlari teng bo'lsin. U holda f(9)−f(5) ifodaning eng katta qiymatini toping.
A) *f(4)* B) *9* C) *4* D) *0*

16. $f(x) = -3x^2+9x+t-3$ funksiyaning maksimumi 5 ga teng. t ning qiymatini toping.
A) *1* B) *1,75* C) *1,25* D) *2*

17. Agar $f(x) = x^3+2ax^2+3bx+8$ va $f''(3) = 22$ bo'lsa, a ni toping.
A) *2* B) *4* C) *3* D) *1*

18. $\int_{-1}^{1}(5x^5-5x^3+x+1)dx$ aniq integralni hisoblang.
A) $\frac{3}{4}$ B) *2* C) $\frac{7}{3}$ D) $\frac{5}{24}$

19. a = −4 bo'lsa, $\int_a^{a+1}(\sin^2 2x+\cos^2 2x)dx$ aniqmas integralni hisoblang.
A) $\frac{\sqrt{2}-1}{2}$ B) *1* C) $2\sqrt{2}$ D) $\sqrt{2}$

20. Teng yonli trapetsiyaning dioganali o'tkir burchak bissektrisasidir. Trapetsiyaning asoslari uzunliklari 2:3 kabi nisbatda, perimetri esa 12 ga teng. Trapetsiyaning o'rta chizig'ini toping.
A) $\frac{7}{2}$ B) $\frac{10}{3}$ C) $\frac{7}{3}$ D) *3*

21. Konusning yasovchisi $4\sqrt{3}$ ga teng. Konusning uchida unga ichki chizilgan shar markazigacha bo'lgan masofa 4 ga teng. Konusning yasovchisi va asos tekisligi orasidagi burchakni toping.
A) $\frac{\pi}{4}$ B) $2\text{arctg}\frac{1}{3}$ C) 2arctg3 D) $\frac{\pi}{3}$

22. Quyida keltirilgan jumlalardan to'g'risini toping.
A) *Agar ikki uchburchakning bir tomoni va ikkita burchagi mos ravishda teng bo'lsa, bu uchburchaklar teng bo'ladi.*
B) *Teng yonli uchburchakning burchaklari teng.*
C) *Teng yonli uchburchakning medianasi uning ham bissektrisasi, ham balanligi bo'ladi.*
D) *Uchburchak uchidan shu uch qarshisidagi tomon yotgan to'gri chiziqqa tushirilgan perpendikulyar uchburchakning balandligi deyiladi.*

23. Muntazam to'rtburchakli prizma asosining yuzi 16 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $\frac{54}{5}\sqrt{6}$ B) $\frac{68}{5}\sqrt{6}$ C) $\frac{44}{3}\sqrt{6}$ D) $\frac{64}{3}\sqrt{6}$

24. $a(2;3;4)$ va $b(1;3;4)$ vektorlar berilgan $c = 2a + b$ vektorning uzunligini toping.

A) $\sqrt{280}$ B) $\sqrt{250}$ C) $\sqrt{310}$ D) $\sqrt{220}$

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(14;3). D uchining absissasi toping.
A) *15* B) *5* C) *0* D) *13*

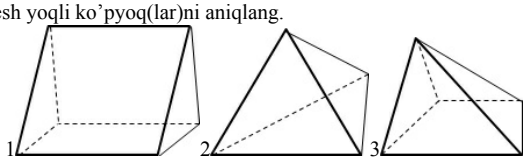
26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. Bir kunlik dars jadvalida turli fanlar bo'yicha 4 ta dars bor. 9 ta fandan iborat bo'lgan shunday jadvallar sonini toping.
A) *126* B) *4940* C) *504* D) *3024*

28. k N da $B_k=x^k+y^k$ darajali yig'indi, $o_1=x+y$, $o_2=xy$ bo'lsa, u holda quyidagi qaysi munosabat doim o'rinli?
A) $B_3=B_1o_1-B_2o_2$ B) $B_3=B_2o_1-B_1o_2$ C) $B_3=B_2o_2+B_1o_1$ D) $B_3=B_2o_1+B_1o_2$

29. $y = \ln^3 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y = \ln^3(x - a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi? Bunda, x > a, x > 0
A) *N(a;−b)* B) *N(a;b)* C) *N(−a;b)* D) *N(b;a)*

30. Besh yoqli ko'pyoq(lar)ni aniqlang.



A) *1, 3* B) *1* C) *3* D) *2*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami , so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'nbeshlik sanoq sistemasiga o'tkazing.
A) *7B* B) *83* C) *67* D) *58*

33. A = "BIOS – ma'lumotlarni kiritish va chiqarish dasturidir."
B = "Shareware – sinovdan o'tkazish muddatiga ega bo'lgan dasturlardir."
C = "Doppix dasturi operatsion sistemadir."
Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
not (A or (not B and C))
A) *Yolg'on*
B) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*
C) *Rost* D) *Ifodada xatolik bor*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo'lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс*
C) *Сумм, Мин* D) *Левсимв, Степень*

35. Web brauzerda matnning ko'rinishi quyidagicha bo'lishi uchun uning HTML kodi qanday bo'lishi kerak? 6. Chala kvadrat tenglama ax⁴+c=0 ko'rinishida bo'lmaydi.
A) *<ul type="circle"> Chala kvadrat tenglama <s> ax ⁴ +c=0 </s> ko'rinishida bo'lmaydi. *
B) *<ol start="6"> Chala kvadrat tenglama ax ⁴ +c=0 </s> ko'rinishida bo'lmaydi. *
C) *<ol start="6">   Chala kvadrat tenglama <s> ax ⁴ +c=0 </s> ko'rinishida bo'lmaydi. *
D) * <s> <site> Chala kvadrat tenglama ax ² +c=0 ko'rinishida bo'lmaydi. </site> </s> *

36. Paskal tilida quyidagi dastur lavhasi bajarilgach b o'zgaruvchi qiymatini aniqlang: x:=-1; y:=-1; a:=0,1; IF (x*x+y>0) AND (a=1/10) THEN b:=true else b:= false;
A) *1* B) *false* C) *-1* D) *true*

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1. $f(x) = \frac{x^2 + 2x}{x + 2}$, $g(x) = \frac{x + 2}{x^2 + 2x}$ x ning haqiqiy qiymatlari yig'indisini toping.
A) *1* B) *−4* C) *0* D) *2*

2. Axborot-resurs markazida 15 ta kompyuter o'rnatilmoqda, bunda ayrimlari kabel bilan ulanmoqda. Har bir kompyuterdan 4 ta kabel chiqishi lozim bo'lsa, jami bo'lib nechta kabel kerak?
A) *40* B) *30* C) *60* D) *24*

3. Arifmetik progressiyada 10─hadi 7 ga, 7─hadi esa 10 ga teng. Progressiyaning 14─hadini toping.
A) *14* B) *3* C) *13* D) *5*

4. $2\sin^2 a - 1$ ifodani ko'paytma ko'rinishiga keltiring.
A) *$-2\sin(45°-\alpha)\cdot\sin(\alpha+45°)$* B) *$-4\sin(45°-\alpha)\cdot\sin(\alpha+45°)$*
C) *$2\cos(\alpha-30°)\cdot\sin(\alpha+30°)$* D) *$2\sin(\alpha-30°)\cdot\cos(\alpha+30°)$*

5. Qandaydir a, b uchun $\cos 4x = a\cos^4 x - 8\cos^2 x + b$ ayniyat bajarilsa, a ni toping.
A) *−8* B) *4* C) *−4* D) *8*

6. Har qanday (x_1, x_2) oraliq uchun y = f(x) funksiya hosilasi manfiy bo'lsin. (x_1, x_2) oraliqqa tegishli ixtiyoriy a va b (a < b) uchun qanday tengsizlik o'rinli?
A) *$f(b) \geq f(a)$* B) *$f(b) > f(a)$* C) *$f(b) < f(a)$* D) *$f(a) < f(b)$*

7. $\frac{2^5 \cdot 11^8}{22^{10}} \cdot \frac{34^4 \cdot 2057}{17^5}$ ni hisoblang.
A) $\frac{1}{2}$ B) $\frac{2}{187}$ C) $\frac{1}{34}$ D) *2*

8. $f(x) = \frac{(x-b)(x-c)}{(a-b)(a-c)} + \frac{(x-a)(x-c)}{(b-a)(b-c)} + \frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = −2 dagi hosilasini toping. (Bu yerda $(a-b)(a-c) \neq 0$)
A) *1* B) *a , b , c ga bog'liq* C) *0* D) *2*

9. (x;y) juftlik $\begin{cases} EKUB(x,y) = 30 \\ \frac{x}{y} = \frac{3}{5} \end{cases}$ tenglamalar sistemasining yechimi bo'lsa, x + y ni hisoblang. (x,y ϵN)
A) *240* B) *480* C) *300* D) *510*

10. $x^2-(k+1)x+k^2+k-32 = 0$ tenglama ildizlaridan biri 2 dan katta, ikkinchisi esa 2 dan kichik bo'lsa, k ning butun qiymatlari yig'indisini toping.
A) *5* B) *4* C) *6* D) *0*

11. $64-x^{5-\log_2 x}=0$ tenglamaning ildizlari ko'paytmasini toping.
A) *8* B) *64* C) *32* D) *16*

12. Agar $|x-3| < 4$ bo'lsa, $|x+1|+|x-4|+|x-6|=10$ tenglamaning ildizlari yig'indisini toping.
A) $7\frac{1}{3}$ B) *1* C) $6\frac{1}{3}$ D) *0*

13. $\sqrt{6-x} < x$ tengsizlikning butun yechimlari o'rta arifmetigini toping.
A) *2,5* B) *4,5* C) *3,5* D) *1*

14. $(a+b)^5$ ko‘phadni standart ko‘rinishga keltiring va koeffitsiyentlar yig‘indisini toping.
A) *32* B) *64* C) *16* D) *34*

15. $y = 2-\frac{1}{\sqrt{x-2}+1}$ funksiyaning qiymatlar sohasini toping.
A) *[1;∞)* B) *[1;2)* C) *[1;4]* D) *(−∞;1]*

16. $y = x^3 \cdot (x^3 - 54)$ funksiya ekstrimumini toping.
A) *−729* B) *−243* C) *−729;0* D) *−243;0*

17. Agar $f(x) = x^3+2ax^2+3bx+8$ va $f''(3) = 22$ bo’lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. $\int_1^8 \frac{4}{x} dx$ integralni hisoblang.
A) *6ln2* B) *18ln2* C) *12ln2* D) *12ln4*

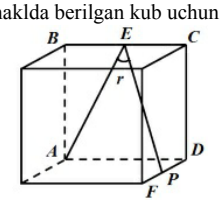
19. $\int \frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) *arcsinx + C* B) *0,5arcsinx + C* C) $\arcsin\frac{x}{2} + C$ D) $\frac{1}{2}\arcsin\frac{x}{2} + C$

20. ABCD teng yonli trapetsiyaning AC dioganali 8 ga teng u AD katta asos bilan 15° li burchak tashkil etadi. Trapetsiyaning yuzini toping.
A) *16* B) *18* C) *20* D) *8*

21. Radiusi 3 ga teng bo’lgan sharga yasovchisi 5 ga teng bo’lgan konus ichki chizilgan. Konus yasovchisining asos tekisligi bilan tashkil etgan burchak sinusini toping.
A) $\frac{5}{6}$ B) $\frac{5}{12}$ C) $\frac{5}{18}$ D) $\frac{4}{5}$

22. Uchburchakning uchlari to’g’ri burchakli dekart koordinatalar sistemasida quyidagicha berilgan: A(0;0), B(1;−8), C(1;0) uchburchakning yuzini toping.
A) *4* B) *5* C) *3* D) *7*

23. Shaklda berilgan kub uchun BE = EC, FP = PD bo’lsa, cosx ni toping.



A) $\frac{10\sqrt{3}}{33}$ B) $\frac{\sqrt{30}}{10}$ C) $\frac{\sqrt{10}}{30}$ D) $\frac{\sqrt{30}}{30}$

24. Agar $a(3;-2;4)$ va $b(-1;5;-2)$ bo'lib, $c = 2a - b$ bo'lsa, b va c vektorlarning skalyar ko'paytmasini toping.
A) *73* B) *−72* C) *72* D) *−73*

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to’rtburchak yuzi 8 ga teng bo’lsa, ABCD parallelogramm yuzini toping.
A) *24* B) *16* C) *12* D) *8*

26. Koordinatalari A(2;0), B(8;0) va C(4;3) nuqtalarda bo’lgan uchburchakning Ox o’qi atrofida aylantirilishidan hosil bo’lgan jismning hajmini toping.
A) *18π* B) *16π* C) *15π* D) *12π*

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko’pi bilan bitta imtihon qo’yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

28. Agar $\frac{4^x + 8^x + 12^x}{5^x + 10^x + 15^x} = \frac{128}{250}$ bo’lsa, x ni toping.
A) *4* B) *2* C) *3* D) *5*

29. $y=\sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x+a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(−a;b)* B) *N(a;b)* C) *N(b;a)* D) *N(a;−b)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o’zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo’lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo’lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig’indisini rim sanoq sistemasida hisoblang.
CLXXXVII = “Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi”
VCIII = “Software – bu informatikaning qismi bo’lib, dasturiy vositalar sifatida qaraladi”
IV = “Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi”
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so’ng 6 raqami qatnashgan barcha sonlarni o’chirib tashladi. Qolgan sonlar yig’indisini sakkizlik sanoq sistemasida aniqlang va o’n uchlik sanoq sistemasiga o’tkazing.
A) *73* B) *65* C) *96* D) *89*

33. A=”Boot Record─buyruq protsessoridir.” B=”Freeware─mutloqo bepul, birlamchi kodi ochiq dasturiy ta’minotdir.” C=’’Paradox─operatsion sistemadir.” Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C or not (B or not A)
A) *Rost* B) *Yolg’on* C) *Ifodada xatolik bor*
D) *Ba’zi mulohazalarning qiymatini aniqlab bo’lmaydi*

34. A1=-7, B1=8, B2=4 bo’lsin. Quyidagi formula natijasi -23 ga teng bo’lishi uchun A2 katakka kiritilishi kerak bo’lgan qiymatni aniqlang.
=ЕСЛИ(ИЛИ(A1+B2<=A2*B1; A1*B1>0); A1*B2+B1-A2; A1*B1+B2+A2)
A) *1* B) *0* C) *3* D) *5*

35. Quyidagi html –hujjat kodi yozilishi bo’yicha kataklar ketma-ket sanalganda nechanchi katakda og’ma shriftli markerlangan ro’yhat qo’llanolgan?
<table> <tr> <td colspan=2>   test
  </td> <td rowspan=2>
 test </td> </tr> <tr> <td>
  test </td> <td>
<site> test </cite> </td> </tr> </table>
A) *Ikkinchi katakda* B) *To’rtinchi katakda*
C) *Uchinchi katakda* D) *Birinchi katakda*

36. Paskal. Dastur natijasini aniqlang.
```
Var p,k: longint; s:string;
F:array[1..11] of integer;
Begin Randomize; S:=’INFORMATIKA’;
P:=1; k:=0; repeat k:=k+1;
F[k]:=round((k+random(k))/(k+1.1));
P:=p*F[k]; until k>=6;
Write(s[p+2]+s[f[3]]+s[k]); readln; End.
```
A) *Natijani aniqlab bo’lmaydi* B) *NMO* C) *NIM* D) *OIM*

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1. 3^{101} soni 101 ga bo’lgandagi qoldiqni toping.
A) *1* B) *27* C) *3* D) *9*

2. Quti sirtining 70% ini bo’yash uchun 350 gramm bo‘yoq sarflandi. Qutining qolgan qismini bo’yash uchun necha gramm bo’yoq kerak bo’ladi?
A) *150* B) *50* C) *100* D) *500*

$x_2 + x_3 + \dots + x_{10} + x_{11} = 1$

3. Agar $x_1 + x_3 + \dots + x_{10} + x_{11} = 2$ bo‘lsa, $x_1+x_2+x_3+\dots+x_{11}$ ni toping.

.....

$x_1 + x_2 + x_3 + \dots + x_{10} = 11$

A) *3,3* B) *5,5* C) *6,6* D) *5*

4. $\frac{tg(a+\beta)-tga-tg\beta}{tg\beta\cdot tg(a+\beta)}$ ifodaning son qiymatini toping, bu yerda $a=\frac{2\pi}{3}$, $\beta=\frac{3\pi}{5}$.

A) *1* B) *−1* C) $-\sqrt{3}$ D) $\sqrt{3}$

5. Qandaydir a, b, c uchun $\cos 4x = a\cos^4 x + b\cos^2 x + c$ ayniyat bajarilsa, a+2b+c ni toping.

A) *−4* B) *−7* C) *0* D) *3*

6. Agar $\log_3 25 = a$, $\log_{25} 8 = b$ bo’lsa, $\log_2 3$ ni a va b orqali ifodalang.

A) $\frac{ab}{3}$ B) $\frac{1}{3ab}$ C) $\frac{3}{ab}$ D) $\frac{3ab}{2}$

7. $\log_{\sqrt{6}-\sqrt{5}}(241-44\sqrt{30})$ ni hisoblang.

A) *6* B) *−5* C) *−4* D) *4*

8. Agar x=2 bo’lsa, $f(x)=\frac{(x-b)(x-c)}{(a-b)(a-c)}+\frac{(x-a)(x-c)}{(b-a)(b-c)}+\frac{(x-a)(x-b)}{(c-a)(c-b)}$ ning qiymatini toping. (Bu yerda $(a-b)(a-c)(b-c)\neq 0$)

A) *2* B) *1* C) *a, b, c ga bog’liq* D) *0*

9. $\begin{cases} x+y=34 \\ \lg x+\lg y=2 \end{cases}$ tenglamalar sistemasining yechimlaridan iborat barcha x va y larning yig‘indisini toping.

A) *36* B) *64* C) *34* D) *68*

10. $(a^2+b^2+4)x^2+2(a+b+2)x+3=0$ tenglama haqiqiy yechimlarga ega bo’lsa, 4a−b ni toping.

A) *3* B) *4* C) *−4* D) *6*

11. $x\cdot 6^{\log_x 7} \le 42$ tengsizlikning butun sonlardan iborat yechimlari nechta?

A) *2* B) *0* C) *1* D) *3*

12. $\frac{|x+4|+x}{x+3} \ge 1$ tengsizlikning manfiy butun yechimlari nechta?

A) *4* B) *3* C) *cheksiz ko’p* D) *5*

13. $2x+8 \le x^2 < 6x$ tengsizlikning butun yechimlari yig'indisini toping.

A) *12* B) *9* C) *6* D) *10*

14. Ko’phadning ozod hadini toping.

$f(x)=(2x+1)^2\cdot(3x+2)^3\cdot(x-1)^{202}+(x-1)^{2000}+17$

A) *17* B) *26* C) *33* D) *−9*

15. $y=3-\sqrt{16-\sqrt{4x^2-4\sqrt{3}x+3}}$ funksiyaning qiymatlar sohasiga nechta butun son tegishli?

A) *3 ta* B) *4 ta* C) *7 ta* D) *5 ta*

16. Agar $f(x)=\frac{x^2+5x}{x^2+1}$ bo’lsa, f '(0) ni toping.

A) *3* B) *0* C) *4* D) *5*

17. Agar $f(x)=x^3-5x^2+2x+a$ va $f''(2)=f(2)$ bo’lsa, a ning qiymatini toping.

A) *5* B) *6* C) *12* D) *10*

18. Agar $\int_a^b (4x+5)dx = 175$ va a+b=10 bo’lsa, b−a ni toping.

A) *6* B) *7* C) *9* D) *2*

19. $\int e^{\sin x}\cdot \cos x\,dx$ integralni hisoblang.

A) $\frac{e^{\sin x}}{\cos x}+C$ B) $e^{\sin x}+C$ C) $\cos x+e^{\sin x}+C$ D) $-e^{\sin x}+C$

20. ABCD teng yonli trapetsiyaning AC dioganali 8 ga teng u AD katta asos bilan 15° li burchak tashkil etadi. Trapetsiyaning yuzini toping.

A) *16* B) *18* C) *20* D) *8*

21. To’g’ri burchakli uchburchakda gipatenuza va kichik katetining yig’indisi 27 ga teng. Agar katta katetning uzunligi $9\sqrt{3}$ ga teng bo’lsa, gipatenuza uzunligini toping.

A) *20* B) *18* C) *15* D) *13,5*

22. Quyidagi keltirilgan jumlalardan noto’g’risini toping.

A) *Agar ikki uchburchakning bir tomoni va ikkita burchagi mos ravishda teng bo’lsa, bu uchburchaklar teng bo’ladi.*

B) *Teng tomonli uchburchak teng yonli uchburchak ham bo’ladi.*

C) *Uchburchakning bir uchi va shu uchining qarshisidagi tomon o’rtasini tutashtiruvchi kesma uning medianasi deyiladi.*

D) *Kesma o’rta perpendikulyarining ixtiyoriy nuqtasi kesma uchlaridan teng uzoqlikda joylashgan.*

23. Kubning dioganalidan ushbu dioganal bilan kesishmaydigan qirrasigacha bo’lgan masofa 4 ga teng. Kubning hajmini toping.

A) $144\sqrt{2}$ B) $240\sqrt{2}$ C) $180\sqrt{2}$ D) $128\sqrt{2}$

24. $a(-2;3)$ va $b(2;n)$ vektorlar berilgan. n ning qanday qiymatida bu vektorlar o‘zaro perpendikulyar boladi?

A) $\frac{3}{4}$ B) $\frac{4}{3}$ C) $-\frac{3}{4}$ D) $-\frac{4}{3}$

25. ABCD parallelogramm uchta uchining koordinatalari ma’lum: A(0;1), B(1;3), C(9;3). ABCD parallelogramm yuzini toping.

A) *14* B) *16* C) *25* D) *24*

26. Koordinatalari A(−2;0), B(4;0) va C(1;3) nuqtalarda bo’lganuchburchakning Ox o’qi atrofida aylantirishdan hosil bo’lgan jismning hajmini toping.

A) *18π* B) *16π* C) *12π* D) *15π*

27. 12 nafar o'quvchilardan iborat guruhda 4 nafar a'zodan tashkil topgan qo'mitani tanlab olish kerak. Bu ishni nechta usulda amalga oshirsa bo'ladi?

A) *48* B) *84* C) *495* D) *120*

28. $\frac{3\cdot 2^{x-1}}{2^x-3^x} > 3+\left(\frac{2}{3}\right)^x$ tengsizlikni yeching.

A) *(0;0,5)* B) *(−1;0)* C) *(−0,5;0)* D) *(0;1)*

29. y=f(x) funksiya grafigi berilgan bo‘lib, uni parallel ko‘chirish yordamida $y=\sin^2(x-a)-b$ funksiya grafigi hosil qilingan. Bunday parallel ko‘chirishda koordinata boshi qanday nuqtaga ko‘chadi?

A) *N (a;−b)* B) *N (b;a)* C) *N (a;b)* D) *N (−a;b)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o’zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo’lsa, DE tomon uzunligini toping.

A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo’lmaydi*

31. Rost mulohazalarga mos sonlar yig’indisini rim sanoq sistemasida aniqlang:

CIX = “Soat millarining harakati uzkukli axborotga misol bo’ladi”

XCVII = “Insonga uzluksiz ta’sir etib turuvchi axborotlar diskret axborotlar deb ataladi”

XLIX = “Axborot xususiyatlariga quyidagilar kiradi: qimmatlilik, ishonchlilik, to’liqlik”

A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (57; 72) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 6 raqami qatnashgan barcha sonlarni o’chirib tashladi. Qolgan sonlar yig’indisini sakkizlik sanoq sistemasida aniqlang va ikkilik sanoq sistemasiga o’tkazing.

A) *10000010* B) *1110001* C) *10000111* D) *10110000*

33. A = "MSDOS.SYS – operatsion sistemani faollashtiruvchi dasturdir."
B = "Biror nomga ega bo'lgan va kompyuter tashqi xotirasida joylashgan baytlar majmuiga latalog deyiladi."
C = "Brainware – algoritmlarni ishlab chiqish, ularni tuzish usul va uslublaini o'rganish bilan bog'liq yo'nalishdir." Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C V ¬ (A B)
A) *Ba'zi mulohazalarning qiymatini aniqlab bolmaydi* B) *Yolg'on*
C) *Rost* D) *Ifodada xatolik bor*

34. A1=-7, B1=8, B2=4 bo'lsin. Quyidagi formula natijasi -23 ga teng bo'lishi uchun A2 katakka kiritilishi kerak bo'lgan qiymatni aniqlang.
=ЕСЛИ(ИЛИ(A1+B2<=A2*B1; A1*B1>0); A1*B2+B1-A2; A1*B1+B2+A2)
A) *1* B) *0* C) *3* D) *5*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?
<table> <tr> <td> <cite> <u> test </u>
 </cite> </td> <td colspan=3>
 test </td> </tr> <tr> <td colspan=2>
  test </td>
<td> <u> test </u> </td> <td>
   test </td> </tr> </table>
A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal tilida quyidagi dastur lavhasi bajarilgach b o'zgaruvchi qiymatini aniqlang: x:=-1; y:=-1; a:=0,1; IF (x*x+y>0) AND (a=1/10) THEN b:=true else b:= false;
A) *1* B) *false* C) *-1* D) *true*

4600016

1. O'sish tartibida yozing: $a = \frac{7}{15}$, $b = \frac{9}{20}$ va $c = \frac{8}{17}$
A) $b < a < c$ B) $b < c < a$ C) $a < b < c$ D) $a < c < b$

2. Amfiteatr qatorlari soni 10 ta bo'lib har bir keyingi qatorda o'rinlar soni o'zidan oldingi qatorlardan 20 ta ortiq. Agar oxirgi qatorda 280 ta o'rin bo'lsa, amfiteatr necha o'rindiq?
A) *2100* B) *2400* C) *2800* D) *1900*

3. Beshta a_1 , a_2 , a_3 , a_4 , a_5 tub son ayirmasi 6 ga teng bo'lgan arifmetik progressiyani tashkil qilsa, $\frac{a_3 + a_5}{2}$ ni toping.
A) *17* B) *bir qiymatni aniqlab bo'lmaydi* C) *11* D) *23*

4. $\frac{tg(a+\beta)-tga-tg\beta}{tg\beta \cdot tg(a+\beta)}$ ifodaning son qiymatini toping, bu yerda $a = \frac{2\pi}{3}$, $\beta = \frac{3\pi}{5}$
A) $-\sqrt{3}$ B) *1* C) *−1* D) $\sqrt{3}$

5. Qandaydir a, b uchun $\cos 4x = a\cos^4 x + b\cos^2 x + 1$ ayniyat bajarilsa, b ni toping.
A) *−8* B) *4* C) *−4* D) *8*

6. Har qanday (x_1, x_2) oraliqda uchun y = f(x) funksiya hosilasi manfiy bo'lsin. (x_1, x_2) oraliqqa tegishli ixtiyoriy a va b (a < b) uchun qanday tengsizlik o'rinli?
A) *f(b) ≥ f(a)* B) *f(b) > f(a)* C) *f(b) < f(a)* D) *f(a) < f(b)*

7. $5 \cdot \left[12\frac{2}{7} + 5\frac{3}{7}\right] - 8 \cdot \left[3\frac{2}{3}\right] \cdot [2,(9)]$ ni hisoblang. Bu yerda [a] – a sonning butun qismi.
A) *37* B) *12* C) *13* D) *15*

8. $f(x) = a^2\frac{(x-b)(x-c)}{(a-b)(a-c)} + b^2\frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = −1 da hosilasini toping. (Bu yerda $(a-b)(a-c)(b-c) \neq 0$)
A) *−2* B) *−1* C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} y-x=3 \\ y-z=4 \\ x^2+y^2+z^2=30 \end{cases}$ tenglamalar sistemasini yeching.
A) *(3;1;4), (−2/3; −5/3; −1/3)* B) *(−3,3; −0,3; −4,3), (2;5;1)*
C) *(−10/3; −1/3; −13/3), (2;5;1)* D) *(1;4;0), (2;5;1)*

10. Agar $|x+7| = \frac{x}{2} + a$ tenglama bitta yechimga ega bo'lsa, a parametr nechta natural qiymatga ega?
A) *1* B) *3* C) *2* D) *0*

11. $x \cdot 6^{\log_x 7} \leq 42$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *2* B) *0* C) *1* D) *3*

12. $\frac{|x+4|+x}{x+3} \geq 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *4* B) *3* C) *cheksiz ko'p* D) *5*

13. $\sqrt{3-x} > x-1$ tengsizlikni yeching.
A) *(−∞;2)* B) *(0;3]* C) *(2;3]* D) *(1;3]*

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2 \cdot (3x+2)^3 \cdot (x-1)^{202} + (x-1)^{2000} + 17$
A) *17* B) *26* C) *33* D) *−9*

15. $y = 2 - \frac{1}{\sqrt{x-2}+1}$ funksiyaning qiymatlar sohasini toping.
A) *[1;∞)* B) *[1;2)* C) *[1;4]* D) *(−∞;1]*

16. $y = x^3 \cdot (x^3 - 54)$ funksiya ekstrimumini toping.
A) *−729* B) *−243* C) *−729;0* D) *−243;0*

17. Agar $f(x) = x^3 + 2ax^2 + 3bx + 8$ va $f''(3) = 22$ bo'lsa, a ni toping.
A) *2* B) *4* C) *3* D) *1*

18. $y = \sin\frac{x}{2}$; y=0; $x = \frac{\pi}{2}$; $x = \pi$ chiziqlar bilan chegaralangan shaklning yuzini toping.
A) $\frac{\sqrt{2}}{2}$ B) *2* C) $\frac{3}{2}$ D) $\sqrt{2}$

19. Ushbu $f(x) = \frac{2x-1}{x^2-x-6}$ funksiyaning boshlang'ich funksiyasini toping.
A) *ln|x+2|+C* B) *ln(|x−3|•|x+2|)+C* C) *ln(x−3)+C* D) $\frac{2x^2}{x-3} + C$

20. O'tkir burchagi 45° ga, balandligi va katta asosining yigindisi a ga teng yonli trapetsiyalar ichida eng katta yuzaga ega bo'lganining kichik asosini toping.
A) $\frac{3a}{4}$ B) $\frac{5a}{4}$ C) $\frac{7a}{4}$ D) $\frac{a}{4}$

21. To'g'ri burchakli uchburchakda gipotenuza va kichik katetning yig'indisi 27 ga teng. Agar katta katetning uzunligi $9\sqrt{3}$ ga teng bo'lsa, unga tashqi chizilgan aylana uzunligini toping.
A) *81π* B) *9π* C) *36π* D) *18π*

22. Uchburchakning uchlari to'g'ri burchakli dekart koordinatalar sistemasida quyidagicha berilgan: A(0;0), B(1;−8), C(1;0) uchburchakning yuzini toping.
A) *4* B) *5* C) *3* D) *7*

23. M nuqta $ABCA_1B_1C_1$ muntazam prizma ABC asosidagi BC tomonning o'rtasi bo'lsin. Prizmaning yon qirrasi $\sqrt{44}$ ga, asosining tomonlari 16 ga teng bo'lsa, B_1M to'g'ri chiziq va ABB_1A_1 yon yoqi orasidagi burchakning sinusini toping.

A) *0,5* B) *0,6* C) $\frac{2}{3}$ D) *0,8*

24. Balandligi h ga, yon yoqi va asos tekisligi orasidagi burchagi 60° ga teng bo'lgan muntazam piramidaga ichki chizilgan sharning radiusini toping.
A) $\frac{h}{3}$ B) $\frac{2h}{3}$ C) $\frac{5h}{6}$ D) $\frac{7h}{9}$

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to'rtburchak yuzi 8 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *24* B) *16* C) *12* D) *8*

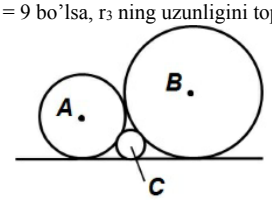
26. Koordinatalari A(−2;0), B(4;0) va C(1;3) nuqtalarda bo'lganuchburchakning Ox o'qi atrofida aylantirishdan hosil bo'lgan jismning hajmini toping.
A) *18π* B) *16π* C) *12π* D) *15π*

27. { x/xϵN, $x^2<32$ } to'plamni nechta usul bilan ikkita kesishmaydigan qism to'plamlar birlashmasi ko'rinishida ifodalash mumkin?
A) *5* B) *31* C) *32* D) *16*

28. kϵN da $B_k=x^k+y^k$ darajali yig'indi, $o_1=x+y$, $o_2=xy$ bo'lsa, u holda quyidagi qaysi munosabat doim o'rinli?
A) $B_3=B_1o_1-B_2o_2$ B) $B_3=B_2o_1-B_1o_2$ C) $B_3=B_2o_2+B_1o_1$ D) $B_3=B_2o_1+B_1o_2$

29. $y = \ln^4 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y = \ln^4(x + a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi? Bunda, x > −a, x > 0
A) *N(a;−b)* B) *N(a;b)* C) *N(−a;b)* D) *N(b;a)*

30. Umumiy urinmaga ega bo'lgan A, B, C markazli aylanalar o'zaro tashqi urinadilar. Ularning radiuslari mos ravishda r_1, r_2 va r_3 bo'lsin. Agar $r_1 = 4$ va $r_2 = 9$ bo'lsa, r_3 ning uzunligini toping.



A) $\frac{49}{36}$ B) $\frac{26}{21}$ C) $\frac{36}{25}$ D) $\frac{32}{23}$

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi:
qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (73; 100) oraliqdagi bacha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'n ikkilik sanoq sistemasiga o'tkazing.
A) *94* B) *71* C) *7B* D) *A3*

33. A = "MSDOC.SYS – amallar bajarishda yuzaga kelishi mumkin bo'lgan uzilishlarni tahlil qilish modulidir."
B = "Biror nomga ega bo'lgan va kompyuter tashqi xotirasida joylashgan baytlar majmuiga fayl deyiladi."
C = "Brainware – algoritmlarni ishlab chiqish, ularni tuzish usul va ulublarini o'rganish bilan bog'liq yo'nalishdir."
Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C and not(A or B)
A) *Ifodada xatolik bor* B) *Rost* C) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi* D) *Yolg'on*

34. MS Excel. A1=5; A2=4; A3=6; B1=4; B2=7; B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Мин*
C) *Счётесли, Макс* D) *Счётесли, Степень*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?
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A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal. Dastur natijasini aniqlang.
Var a, k: integer; s:string;
Begin Randomize; S:='INFORMATIKA';
a:=1; k:=0;
repeat k:=k+trunk((a+random(a))/a);
a:=a+1; until k>5;
Write(s[a]+s[k]+s[a+k]); readln; End.
A) *Dastur ishga tushirilganda xatolik xabari chiqadi*
B) *AM* C) *MOR* D) *MRA*

4600017

1. $\left(\frac{\sqrt{y}-\sqrt{x}}{y-\sqrt{xy}+x}+\frac{x}{x\sqrt{x}+y\sqrt{y}}\right)\cdot\frac{x\sqrt{x}+y\sqrt{y}}{y}$ ni soddalashtiring.
A) *2* B) *1* C) *4* D) *3*

2. Bir guruh bolalarning o'rtacha og'irligi 40 kg ga teng. Qiz bolalarning o'rtacha og'irligi 35 kg, o'g'il bolalarning o'rtacha og'irligi esa 50 kg ligi ma'lum. Agar guruh a'zolarining 20 nafari qiz bolalar bo'lsa, o'g'il bolalar sonini toping.
A) *20* B) *8* C) *10* D) *6*

3. 2+5+8+…..+x = 100 tenglamani qanoatlantiradigan x musbat butun sonni toping.
A) *17* B) *20* C) *29* D) *23*

4. Agar tgα=−4 bo'lsa, $\frac{2\cos 2a-1}{2-9\cos^2 a}$ ning qiymatini toping.
A) *−0,5* B) *−9,5* C) *−3,16* D) *−1,88*

5. Qandaydir a, b, c uchun $\cos 4x = a\cos^4 x + b\cos^2 x + c$ ayniyat bajarilsa, b ni toping.
A) *−4* B) *4* C) *−8* D) *8*

6. Agar $\log_9 25=a$, $\log_{25} 8=b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{2ab}{3}$ B) $\frac{3ab}{2}$ C) $\frac{2}{3ab}$ D) $\frac{3}{2ab}$

7. $\log_{\sqrt{6}-\sqrt{5}}(241-44\sqrt{30})$ ni hisoblang.
A) *6* B) *−5* C) *−4* D) *4*

8. Agar a = −5, b = −4 bo'lsa, $(a^3+a^2b+ab^2+b^3)(a-b)$ ifodani qiymatini toping.
A) *425* B) *330* C) *369* D) *544*

9. $\begin{cases} |x+4| \le 9 \\ |2x+5| \ge 15 \end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *4* B) *7* C) *6* D) *5*

10. Agar $|x+7| = \frac{\pi}{2} + a$ tenglama bitta yechimga ega bo'lsa, a parametr nechta natural qiymatga ega?
A) *1* B) *3* C) *2* D) *0*

11. $x^{\lg^2 x - 3\lg x + 1} < 1000$ tengsizlikning eng katta natural yechimini toping.
A) *1000* B) *999* C) *1001* D) *99*

12. $\sqrt{x+2} + |x-4| \le 6$ tengsizlikning butun sonlardan iborat yechimlari yig'indisini toping.
A) *−2* B) *18* C) *25* D) *6*

13. $x^6-28x^3+27 \le 0$ tengsizlik nechta butun yechimga ega?
A) *1* B) *3* C) *27* D) *cheksiz ko'p*

14. $P(x) = (3x-1)^{2017}\cdot(2x-1)^{2016}+(4x-3)^2\cdot(6x-5)^2+2$ ko'phad koeffitsiyentlarining yig'indisini toping.
A) $2^{2017}+3$ B) $2^{2017}+1$ C) *9* D) *16*

15. $y = \dfrac{x^2+16}{x}$ funksiyaning qiymatlar sohasiga tegishli bo'lmagan butun sonlar yig'indisini toping.
A) *0* B) *4* C) *−8* D) *−2*

16. $\dfrac{16x^2}{(1+x^2)(9x^2+1)}$ ifodaning eng katta qiymatini toping.
A) *2* B) *0,8* C) *1* D) *3*

17. Agar $f(x)=x^3-5x^2+2x+a$ va $f''(2)=f(2)$ bo'lsa, a ning qiymatini toping.
A) *5* B) *6* C) *12* D) *10*

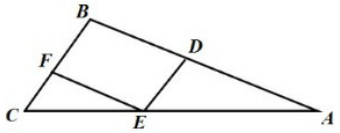
18. $\int_1^{e^8}\dfrac{4}{x}dx$ integralni hisoblang.
A) *18ln2* B) *12ln2* C) *6ln2* D) *12ln4*

19. $\int e^{2\sin x}\cdot\cos x\,dx$ integralni hisoblang.
A) $\dfrac{e^{2\sin x}}{2\cos x}+C$ B) $\dfrac{1}{2}e^{2\sin x}+C$ C) $\cos x+e^{2\sin x}+C$ D) $-\dfrac{1}{2}e^{2\sin x}+C$

20. ABCD teng yonli trapetsiyaning AC dioganali 8 ga teng u AD katta asos bilan 15° li burchak tashkil etadi. Trapetsiyaning yuzini toping.
A) *16* B) *18* C) *20* D) *8*

21. To'g'ri burchakli uchburchakda gipatenuza va kichik katetining yig'indisi 27 ga teng. Agar katta katetning uzunligi $9\sqrt{3}$ ga teng bo'lsa, gipatenuza uzunligini toping.
A) *20* B) *18* C) *15* D) *13,5*

22. Rasmda ABC uchburchak berilgan. Agar DE||BC va EF||AB bo'lib, $S_{ADE}=32$, $S_{EFC}=30$ bo'lsa, BDEF to'rtburchakning yuzini toping.



A) $18\sqrt{22}$ B) $16\sqrt{15}$ C) $16\sqrt{26}$ D) $18\sqrt{14}$

23. M nuqta $ABCA_1B_1C_1$ muntazam prizma ABC asosidagi BC tomonning o'rtasi bo'lsin. Prizmaning yon qirrasi $\sqrt{44}$ ga, asosining tomonlari 16 ga teng bo'lsa, B_1M to'g'ri chiziq va ABB_1A_1 yon yoqi orasidagi burchakning sinusini toping.
A) *0,5* B) *0,6* C) $\dfrac{2}{3}$ D) *0,8*

24. $\vec{a}(2;3;4)$ va $\vec{b}(1;3;4)$ vektorlar berilgan. $\vec{c} = 2\vec{a} + \vec{b}$ vektorning uzunligini toping.
A) $\sqrt{250}$ B) $\sqrt{280}$ C) $\sqrt{220}$ D) $\sqrt{310}$

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(9;3). ABCD parallelogramm yuzini toping.
A) *14* B) *16* C) *25* D) *24*

26. Koordinatalari A(−2;0), B(4;0) va C(1;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirishdan hosil bo'lgan jismning hajmini toping.
A) *18π* B) *16π* C) *12π* D) *15π*

27. $\{ x/x\in N, x^2 < 32 \}$ to'plamni nechta usul bilan ikkita kesishmaydigan qism to'plamlar birlashmasi ko'rinishida ifodalash mumkin?
A) *5* B) *31* C) *32* D) *16*

28. Agar $\dfrac{4^x+8^x+12^x}{5^x+10^x+15^x}=\dfrac{128}{250}$ bo'lsa, x ni toping.
A) *4* B) *2* C) *3* D) *5*

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x-a)-b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N (a; −b)* B) *N (b;a)* C) *N (a;b)* D) *N (−a;b)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CVCIV = "≪Informatika≫ termini fransuz tilidagi ≪informatique≫ terminidan kelib chiqqan"
IV = "XX asrning 40-yillarida informatika faniga asos solingan"
XIX = "Informatika uchun o'rganish obyekti – bu axborot"
A) *CCIII* B) *XXIII* C) *CCXVII* D) *CCXVIII*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami , so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'nbeshlik sanoq sistemasiga o'tkazing.
A) *7B* B) *83* C) *67* D) *58*

33. A = "MSDOC.SYS – amallar bajarishda yuzaga kelishi mumkin bo'lgan uzilishlarni tahlil qilish modulidir."
B = "Biror nomga ega bo'lgan va kompyuter tashqi xotirasida joylashgan baytlar majmuiga fayl deyiladi."
C = "Brainware – algoritmlarni ishlab chiqish, ularni tuzish usul va ulublarini o'rganish bilan bog'liq yo'nalishdir."
Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C and not(A or B)
A) *Ifodada xatolik bor* B) *Rost* C) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi* D) *Yolg'on*

34. MS Excel.
=?(−23;6) – ЗНАЧЕН(ЗАМЕНИТЬ(??(−23;6);2;2;6))
formulaning natijasi 67 bol'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Мин, Мин* B) *Остат, Заменить*
C) *Мин, Макс* D) *Остат,Сцепить*

35. Quyidagi html –hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda og'ma shriftli markerlangan ro'yhat qo'llanolgan?
<table> <tr> <td colspan=2>   test
  </td> <td rowspan=2>
 test </td> </tr> <tr> <td>
  test </td> <td>
<site> test </cite> </td> </tr> </table>
A) *Ikkinchi katakda* B) *To'rtinchi katakda* C) *Uchinchi katakda* D) *Birinchi katakda*

36. Paskal. Dastur natijasini aniqlang.
Var a, b, c: integer; k:boolean;
Begin Randomize; a:=1+random(1);
b:=1+trunc(random); k:=true;
While k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(a+b+c,k); readln; End.
A) *5FALSE* B) *8TRUE* C) *Natijani aniqlab bo'lmaydi* D) *8FALSE*

4600018

1. 3^{101} soni 101 ga bo'lgandagi qoldiqni toping.
A) *1* B) *27* C) *3* D) *9*

2. Sotuvchi mahsulotni A so'mdan sotmoqda. Agar mahsulot narxini 20% ga oshirib, so'ngra 20% ga kamaytirilsa, u holda sotuvchi foyda ko'radimi yoki zarar?
A) *4% foyda* B) *2% zarar* C) *2% foyda* D) *4% zarar*

3. $2+5+8+\ldots..+x = 100$ tenglamani qanoatlantiradigan x musbat butun sonni toping.
A) *17* B) *20* C) *29* D) *23*

4. Agar $tg4\alpha=-\frac{1}{3}$ bo'lsa, $ctg\alpha-tg\alpha-2tg2\alpha$ ning qiymatini toping.
A) *−6* B) *−2* C) *−8* D) *−12*

5. a, b manfiy butun sonlar uchun a=b+5 va a+b−c=13 bo'lsa, c ning eng katta qiymatini toping.
A) *−17* B) *−18* C) *−19* D) *−20*

6. Agar $\log_3 25 = a$, $\log_{25} 8 = b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{ab}{3}$ B) $\frac{1}{3ab}$ C) $\frac{3}{ab}$ D) $\frac{3ab}{2}$

7. Agar $x=\frac{\sqrt{17}+1}{2}$ bo'lsa, $\frac{x^3-3x^2+8x-2}{x^2-x+1}$ kasrning qiymatini hisoblang.
A) $\sqrt{17}+1$ B) $\sqrt{17}$ C) $\sqrt{17}-2$ D) $\sqrt{17}-1$

8. Agar x=2 bo'lsa, $f(x)=\frac{(x-b)(x-c)}{(a-b)(a-c)}+\frac{(x-a)(x-c)}{(b-a)(b-c)}+\frac{(x-a)(x-b)}{(c-a)(c-b)}$ ning qiymatini toping. (Bu yerda (a−b)(a−c)(b−c)≠0)
A) *2* B) *1* C) *a, b, c ga bog'liq* D) *0*

9. $\begin{cases}|5+x|\le 9\\ |2x+5|\ge 13\end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *7* B) *4* C) *6* D) *5*

10. $\frac{x-3}{6}+\frac{4-x}{2}=\frac{2x-1}{3}-x$ tenglamani yeching.
A) *Ø* B) *−1* C) *1* D) *0,5*

11. $64-x^{5-\log_2 x}=0$ tenglamaning ildizlari ko'paytmasini toping.
A) *8* B) *64* C) *32* D) *16*

12. Agar $|x+7|=\frac{x}{2}+a$ tenglama bitta yechimga ega bo'lsa, a parametr nechta natural qiymatga ega?
A) *1* B) *3* C) *2* D) *0*

13. Nomanfiy x, y sonlar uchun $a=5x+\frac{y}{5}$ va $b=2\sqrt{xy}$ bo'lsin. Qaysi tengsizlik har doim o'rinli?
A) $a>b$ B) $a<b$ C) $a\le b$ D) $a\ge b$

14. a ning qanday qiymatida $P(x)=2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko'phadning koeffitsiyentlari yig'indisi 7 ga teng bo'ladi?
A) *−1* B) *−4* C) *2* D) *3*

15. $y=\frac{\sqrt{2x-1}+\sqrt{x-1}}{x^2-5x+8}$ funksiyaning aniqlanish sohasini toping.
A) *[1;∞)* B) *[0,5;1]* C) *[0,5;+∞)* D) *(∞;0,5]*

16. Agar $f(x)=ax^3-5x^2+b$ va $f'(2)=16$ bo'lsa, a ni toping.
A) *1* B) *3* C) $\frac{1}{3}$ D) $\frac{2}{3}$

17. Agar $f(x)=x^3-5x^2+x+a$ va $f''(2)=f(2)$ bo'lsa, a ni toping.
A) *6* B) *5* C) *10* D) *12*

18. Agar $\int_a^b(4x+5)dx=225$ va a+b = 10 bo'lsa, b−a ni toping.
A) *6* B) *9* C) *7* D) *2*

19. $\int\frac{dx}{3+x^2}$ ni hisoblang.
A) $\frac{1}{\sqrt{3}}arctgx+C$ B) $\frac{1}{3}arctg\frac{x}{3}+C$
C) $\frac{1}{\sqrt{3}}arctg\frac{x}{3}+C$ D) $\frac{1}{\sqrt{3}}arctg\frac{x}{\sqrt{3}}+C$

20. Diagonallari 90° burchak ostida kesishuvchi ABCD trapetsiyaning asoslari mos ravishda 8 va 2 ga teng. Dioganallarining kesishish nuqtasidan asoslariga parallel to'g'ri chiziq o'tkazilgan. Ushbu to'g'ri chiziqning yon tomonlar bilan chegaralangan kesmasi uzunligini toping.
A) *3,2* B) *1,6* C) *1,8* D) *3,25*

21. ABCD to'rtburchak aylanaga ichki chizilgan. ABC uchburchak 110° ga, CAD burchak 64° ga teng bo'lsa, ABD burchakning gradus o'lchovini toping.
A) *36°* B) *44°* C) *46°* D) *22°*

22. y = x, y = -x va y = -2 to'g'ri chiziqlar hosil qilgan uchburchak yuzini toping.
A) *2* B) *1* C) *3* D) *4*

23. M nuqta $ABCA_1B_1C_1$ muntazam prizma ABC asosidagi BC tomonning o'rtasi bo'lsin. Prizmaning yon qirrasi $\sqrt{44}$ ga, asosining tomonlari 16 ga teng bo'lsa, B_1M to'g'ri chiziq va ABB_1A_1 yon yoqi orasidagi burchakning sinusini toping.
A) *0,5* B) *0,6* C) $\frac{2}{3}$ D) *0,8*

24. Muntazam o'nikkiburchakli piramidaning yon qirrasi 5 ga, piramidaning balandligi 3 ga teng. Piramidaga tashqi chizilgan sferaning radiusini toping.
A) $\frac{29}{6}$ B) $\frac{5}{3}$ C) $\frac{25}{6}$ D) *4*

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to'rtburchak yuzi 24 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *36* B) *33* C) *48* D) *34*

26. Koordinatalari A(−2;0), B(4;0) va C(2;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) *18π* B) *15π* C) *16π* D) *12π*

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko'pi bilan bitta imtihon qo'yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

28. $\frac{5^x}{5^x-4^x}<5$ tengsizlikning eng katta butun manfiy va eng kichik butun musbat yechimlari yig'indisini toping.
A) *−1* B) *1* C) *2* D) *−3*

29. $y=\ln^4 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\ln^4(x+a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi? Bunda, x > −a, x > 0
A) *N(a;−b)* B) *N(a;b)* C) *N(−a;b)* D) *N(b;a)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (57; 72) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va ikkilik sanoq sistemasiga o'tkazing.
A) *10000010* B) *1110001* C) *10000111* D) *10110000*

33. Informatika o'rganadigan asosiy ashyoni aniqlang.
A) *algoritm* B) *dastur* C) *kompyuter* D) *axborot*

34. MS Excel. A1=5;A2=4;A3=6;B1=4;B2==7;B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Степень*
C) *Счётесли, Мин* D) *Счётесли, Макс*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda tagchiziqli va og'ma shrift qo'llanilgan?
<table> <tr> <td colspan=2> <b> <a href="#test">
test < / em> < / b > < / a> < / td> < td rowspan=2>
<u> <sup> test < / sup > < / u >
< / strong > </ ul> </td> </tr> <tr> <td> <cite> <u>
<img src=test.jpg> test < /u> </cite> </td> <td> <dl>
<sub> <dd> test </ sub> </dl> </td> </tr> </table>
A) *Birinchi katakda* B) *Ikkinchi katakda*
C) *Uchinchi katakda* D) *To'rtinchi katakda*

36. Paskal. Dastur natijasini aniqlang.
Var N, k: integer; S: String;
Begin Randomize; S: = 'DTM – 2017'; n: = Random(1)+2;
S: = s[n]+s[1];
Insert('01.08',s,2); K:Random(1)+5;
Write(S[k]); readln; End.
A) *Natijani aniqlab bo'lmaydi* B) *1* C) *0* D) *8*

4600019

1. Agar $a = 6^{300}$ va $b = 3^{600}$ bo'lsa, quyidagi munosabatlardan qaysi biri o'rinli bo'ladi?
A) $a < b$ B) $a > b$ C) $a = b$ D) $a = b+1$

2. Yuk tashish mashinasi 240 km yo'lni bosib o'tishi kerak edi. Mashina yo'lning o'rtasida 30 daqiqa to'xtab qolgach tezligini 20km/soat ga oshirib, belgilangan joyga o'z vaqtida yetib keldi. Mashina yo'lning ikkinchi yarmini bosib o'tishiga ketgan vaqtni (soat) toping.
A) *1,5* B) *2* C) *1,2* D) *1,4*

3. Arifmetik progressiyada 10−hadi 7 ga, 7−hadi esa 10 ga teng. Progressiyaning 8−hadini toping.
A) *13* B) *9* C) *14* D) *10*

4. $2\sin^2 a - 1$ ifodani ko'paytma ko'rinishiga keltiring.
A) $-2\sin(45°-\alpha)\cdot\sin(\alpha+45°)$ B) $-4\sin(45°-\alpha)\cdot\sin(\alpha+45°)$
C) $2\cos(\alpha-30°)\cdot\sin(\alpha+30°)$ D) $2\sin(\alpha-30°)\cdot\cos(\alpha+30°)$

5. a, b manfiy butun sonlar uchun a=b+5 va a+b−c=13 bo'lsa, c ning eng katta qiymatini toping.
A) -17 B) -18 C) -19 D) -20

6. Agar $\log_9 25=a$, $\log_{25} 8=b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{2ab}{3}$ B) $\frac{3ab}{2}$ C) $\frac{2}{3ab}$ D) $\frac{3}{2ab}$

7. $5\cdot\left[12\frac{2}{7}+5\frac{3}{7}\right]-8\cdot\left[3\frac{2}{3}\right]\cdot[2,(9)]$ ni hisoblang. Bu yerda [a] – a sonning butun qismi.
A) *15* B) *13* C) *37* D) *12*

8. Agar a=5, b=−4 bo'lsa, $(a^3+a^2b+ab^2+b^3)(a-b)$ ifodaning qiymatini toping.
A) *330* B) *369* C) *425* D) *544*

9. $\begin{cases} x-y=3 \\ \lg x+\lg y=1 \end{cases}$ tenglamalar sistemasining yechimlaridan iborat barcha x va y larning yig'indisini toping.
A) *7* B) *14* C) *10* D) *6*

10. $2x-3\sqrt{2x-1}+1=0$ tenglamaning ildizlari yig'indisini toping.
A) *3* B) *2,5* C) *2* D) *3,5*

11. $\log_2 10\cdot\lg 2$ dan kichik bo'lgan natural sonlar nechta?
A) *2* B) *3* C) *0* D) *1*

12. $\left|\frac{x^2-5x+4}{x^2-4}\right|\le 1$ tengsizlikni qanoatlantirmaydigan tub sonni toping.
A) *7* B) *5* C) *2* D) *3*

13. Agar $a < 0$ va $b > 0$ bo'lsa $ax+a > bx+b$ tengsizlikning eng katta butun yechimini toping.
A) *2* B) *−2* C) *−1* D) *0*

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2\cdot(3x+2)^3\cdot(x-1)^{202}+(x-1)^{2000}+17$
A) *17* B) *26* C) *33* D) *−9*

15. $y=2-\frac{1}{\sqrt{x-2}+1}$ funksiyaning qiymatlar sohasini toping.
A) *[1;∞)* B) *[1;2)* C) *[1;4]* D) *(−∞;1]*

16. $f(x)=-3x^2+9x+t-3$ funksiyaning maksimumi 4 ga teng. t ning qiymatini toping.
A) *1* B) *0,75* C) *0,25* D) *2*

17. Agar $f(x)=x^3+2ax^2+3bx+8$ va $f''(3)=22$ bo'lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. $\int_{-1}^{1}(2x^5-3x^3+x+1)dx$ aniq integralni hisoblang.
A) $\frac{7}{3}$ B) $\frac{3}{4}$ C) *2* D) $\frac{5}{24}$

19. $\int\frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) $0,5\arcsin\frac{x}{2}+C$ B) $\arcsin\frac{x}{2}+C$ C) $\arcsin x+C$ D) $0,5\arcsin x+C$

20. ABCD teng yonli trapetsiyaning AC dioganali 8 ga teng u AD katta asos bilan 15° li burchak tashkil etadi. Trapetsiyaning yuzini toping.
A) *16* B) *18* C) *20* D) *8*

21. ABCD to'g'ri to'rtburchak AC dioganali orqali ikkita ABC va ACD uchburchaklarga ajratilgan. Agar AB = 9, AD = 12 bo'lsa, ABC va ACD uchburchaklarga ichki chizilgan aylanalar markazlari orasidagi masofani toping.
A) *6* B) $2\sqrt{5}$ C) *4* D) $3\sqrt{5}$

22. Quyidagi keltirilgan jumlalardan to'g'risini toping.
A) *Burchak tomonlaridan teng masofada uzoqlashgan burchak ichidagi nuqta*

shu burchakning bissektrisasida yotadi.
B) *Uchburchakning tashqi burchagi , ikkita ichki burchaklari yig'indisiga teng.*
C) *Uchburchakning istalgan bir tomoni qolgan ikki tomoni yig'indisidan katta.*
D) *Agar ikki kesma kesishmasa ular parallel bo'ladi.*

23. Muntazam to'rtburchakli prizma asosining yuzi 36 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $48\sqrt{6}$ B)$30\sqrt{6}$ C)$42\sqrt{6}$ D)$40\sqrt{6}$

24. $a(2;3;4)$ va $b(1;3;4)$vektorlar berilgan. $c = 2a + b$ vektorning uzunligini toping.
A) $\sqrt{250}$ B) $\sqrt{280}$ C) $\sqrt{220}$ D) $\sqrt{310}$

25. ABCD parallelogram uchta uchining koordinatalari ma'lum: A(0;1), B(1;2), C(6;2). ABCD parallelogrammning yuzini toping.
A) *7* B) *5* C) *3* D) *4*

26. Koordinatalari A(−2;0), B(4;0) va C(2;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) 18π B) 15π C) 16π D) 12π

27. $\{ x/x\in N, x^2<32 \}$ to'plamni nechta usul bilan ikkita kesishmaydigan qism to'plamlar birlashmasi ko'rinishida ifodalash mumkin?
A) *5* B) *31* C) *32* D) *16*

28. Agar $\frac{4^x + 8^x + 12^x}{5^x + 10^x + 15^x} = \frac{250}{128}$ bo'lsa, x ni toping.
A) -3 B) -5 C) -4 D) -2

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida y=f(x-m) – n funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(-m;-n)* B) *N(m;n)* C) *N(m;-n)* D) *N(-m;n)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
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A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami , so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'nbeshlik sanoq sistemasiga o'tkazing.
A) *7B* B) *83* C) *67* D) *58*

33. To'g'ri tenglikni ko'rsating:
A) *1 Kbit=1024 bayt.* B) *1 Kbit=1000 bit.*
C) *1 Kbit=1024 bit.* D)*Kbit=1 bayt.*

34. MS Excel. A1=10; B1=14; B2=6 bo'lsa, =СУММ(A1 -B2; A2-B1) funksiyaning javobi 5 ga teng. Bo'lishi uchun A2 katakda qanday son bo'lishi kerak?
A) *14* B) *15* C) *16* D) *17*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda tagchiziqli va og'ma shrift qo'llanilgan?
<table> <tr> <td colspan=2> <b> <a href="#test">
test < / em> < / b > < / a> < / td> < td rowspan=2>
<u> <sup> test < / sup > < / u >
< / strong > </ ul> </td> </tr> <tr> <td> <cite> <u>
<img src=test.jpg> test < /u> </cite> </td> <td> <dl>
<sub> <dd> test </ sub> </dl> </td> </tr> </table>
A) *Birinchi katakda* B) *Ikkinchi katakda*
C) *Uchinchi katakda* D) *To'rtinchi katakda*

36. Paskal. Quyidagi dastur natijasini aniqlang. vara, b, c: integer;
Begin a : =30; b := 6; a := a *b;
if a > b then c : = a+4 * b else c : =a-4 * b;
write(c; 1); end.
A) *114* B) *Kompilyatsiyada xatolik xabari chiqadi* C) *204* D) *6*

4600020

1. $0,((\overline{8a}))$ davriy kasrning qiymati $\frac{28}{33}$ ga teng bo'lsa, a ning qiymatini toping (bu yerda $(\overline{8a})$ ikki xonali son).
A) *1* B) *4* C) *7* D) *0*

2. Bir nechta matematiklar va 16 nafar fiziklardan tashkil topgan bir guruh olimlarning o'rtacha yoshi 40 ga teng. Matematiklarning o'rtacha yoshi 35 ga, fiziklarning o'rtacha yoshi esa 50 ga tengligi ma'lum bo'lsa, matematiklar sonini toping.
A) *30* B) *32* C) *34* D) *38*

3. 2+5+8+…..+x = 100 tenglamani qanoatlantiradigan x musbat butun sonni toping.
A) *17* B) *20* C) *29* D) *23*

4. Agar $tg4\alpha=-\frac{1}{3}$ bo'lsa, $ctg\alpha-tg\alpha-2tg2\alpha$ ning qiymatini toping.
A) -6 B) -2 C) -8 D) -12

5. Qandaydir a, b uchun $\cos4x=a\cos^4x-8\cos^2x+b$ ayniyat bajarilsa, a+b ni toping.
A) -7 B) *3* C) *9* D) *0*

6. Har qanday (x_1,x_2) oraliq uchun y=f(x) funksiya hosilasi musbat bo'lsin. (x_1,x_2) oraliqqa tegishli ixtiyoriy a va b (a > b) uchun qanday tengsizlik o'rinli?
A) $f(b) < f(a)$ B) $0< f(a) < f(b)$ C) $f(a) < f(b)$ D) $f(b) \geq f(a)$

7. $\log_{\sqrt{6}+\sqrt{5}}(241-44\sqrt{30})$ ni hisoblang.
A) *6* B) -5 C) -4 D) *4*

8. $f(x) = a^2\frac{(x-b)(x-c)}{(a-b)(a-c)} + b^2\frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = 2 da hosilasini toping. (Bu yerda $(a-b)(a-c)(b-c) \neq 0$)
A) *2* B) *4* C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} EKUB(x,y) = 12 \\ \frac{x}{y} = \frac{3}{4} \end{cases}$ tenglamalar sistemasini yeching. (x, y $\in$N)
A) *(48;60)* B) *(24;36)* C) *(36;48)* D) *(60;72)*

10. $(x^2-8x+18)^2-8(x^2-8x+18)+18 = x$ tenglamaning natural yechimlari yig'indisini toping.
A) *3* B) *9* C) *18* D) *1*

11. $x^{\lg^2x-4\lg x+1}>10000$ tengsizlikning eng kichik natural yechimini toping.
A) *10001* B) *100* C) *10000* D) *1001*

12. $\sqrt{x+2} + |x-4| \leq 6$ tengsizlikning butun sonlardan iborat yechimlari yig'indisini toping.
A) -2 B) *18* C) *25* D) *6*

13. x < 6 bo'lsa, 3x+2y−6 = 0 tenglamadan y ning qiymatlarini toping.
A) $y < -6$ B) $-1 < y < 1$ C) $y > -6$ D) $y > -3$

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2\cdot(3x+2)^3\cdot(x-1)^{202}+(x-1)^{2000}+17$
A) *17* B) *26* C) *33* D) *−9*

15. $y=\frac{5}{x^2+5}$ funksiyaning qiymatlar sohasiga kirmaydigan eng katta manfiy butun sonni toping.
A) *−1* B) *−4* C) *−3* D) *−2*

16. Agar $f(x)=\ln e^x-\log_x x^2$ bo'lsa, $f'(1)+f(e)$ ning qiymatini toping.
A) $e-1$ B) $e-2$ C) e D) -2

17. Agar $f(x)=x^3+2ax^2+3bx+8$ va $f''(3)=22$ bo'lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. $\int_{-\frac{\pi}{3}}^{\frac{\pi}{3}}(\sin 2x-\sin x)dx$ aniq integralni hisoblang.
A) $\frac{\sqrt{3}}{3}$ B) *0* C) $\frac{3}{4}$ D) $\frac{\sqrt{3}}{3}-\frac{1}{2}$

19. $\int\frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) *arcsinx + C* B) *0,5arcsinx + C* C) $\arcsin\frac{x}{2}+C$ D) $\frac{1}{2}\arcsin\frac{x}{2}+C$

20. ABCD trapetsiyaning AD va BC asoslari mos ravishda 8 va 4 ga teng. Agar ACD uchburchakning yuzi 12 ga teng bo'lsa, berilgan trapetsiya yuzini toping.
A) *9* B) *18* C) *12* D) *24*

21. Balandligi 3 ga va asosining radiusi 1 ga teng bo'lgan konus sharga ichki chizilgan. Shar sirtining yuzini toping.
A) $12\frac{1}{9}\pi$ B) $12\frac{2}{3}\pi$ C) $11\frac{1}{9}\pi$ D) $11\frac{2}{9}\pi$

22. ABC uchburchakda AD mediana va BE bissektrisa o'tkazilgan. Agar BE bissektrisa AD medianani asosidan boshlab hisoblaganda 3 : 8 nisbatda bo'lsa, u holda AC tomonni qanday nisbatda bo'ladi?
A) *3 : 4* B) *3 : 2* C) *3 : 16* D) *3 : 5*

23. Muntazam to'rtburchakli prizma asosining yuzi 36 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $48\sqrt{6}$ B) $30\sqrt{6}$ C) $42\sqrt{6}$ D) $40\sqrt{6}$

24. Piramida asosining tomoni $2\sqrt{3}$ va o'tkir burchagi 60° ga teng bo'lgan rombdan iborat. Ushbu piramidaga ichki chizilgan konusning yasovchisi asos tekisligi bilan 60° li burchak tashkil etadi. Konusning hajmini toping.
A) $\frac{9\sqrt{3}\pi}{8}$ B) $\frac{27\pi}{8}$ C) 3π D) 6π

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(8;3). D uchining absissasi va ordinatasining yig'indisini toping.
A) *0* B) *14* C) *8* D) *5*

26. Koordinatalari A(−2;0), B(4;0) va C(2;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) 18π B) 15π C) 16π D) 12π

27. $\{x/x\in N, 0\le x<5\}$ to'plamning nechta qism to'plamlari mavjud?
A) *16* B) *4* C) *32* D) *5*

28. $\frac{2^{x-1}-1}{2^{x-1}+1}<2$ tengsizlikni yeching.
A) $(-\infty;0)$ B) $(0;\infty)$ C) $(-\infty;\infty)$ D) $\varnothing$

29. $y=\sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x-m)+n$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(m;n)* B) *N(−m;n)* C) *N(m;−n)* D) *N(−m;−n)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi: qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (57; 72) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va ikkilik sanoq sistemasiga o'tkazing.
A) *10000010* B) *1110001* C) *10000111* D) *10110000*

33. A = "BIOS – ma'lumotlarni kiritish va chiqarish dasturidir."
B = "Shareware – sinovdan o'tkazish muddatiga ega bo'lgan dasturlardir."
C = "Doppix dasturi operatsion sistemadir."
SHu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
not (A or (not B and C))
A) *Yolg'on* B) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*
C) *Rost* D) *Ifodada xatolik bor*

34. MS Excel, A1=5; A2=4; A3=6; B1=4; B2=7; B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Мин* C) *Счётесли, Макс* D) *Счётесли, Степень*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?
<table> <tr> <td> <cite> <u> test </u>
 </cite> </td> <td colspan=3>
 test </td> </tr> <tr> <td colspan=2>
  test </td>
<td> <u> test </u> </td> <td>
   test </td> </tr> </table>
A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal. Dastur natijasini aniqlang.
Var a,b,c: integer; k:boolean; s:string;
Begin Randomize; S:=´INFORMATIKA´;
a:=1+random(1); b:=1+trunc(random); k:=true;
while k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(s[a]+s[b]+s[c]); readln; End.
A) *NON* B) *IFA* C) *Natijani aniqlab bo'lmaydi* D) *IIF*

4600021

1. Taqqoslang: $a=40^{15}$ va $b=25^{15}+15^{15}$
A) $a+20<b$ B) $a<b$ C) $a>b$ D) $a=b$

2. Quti sirtining 75% ini bo'yash uchun 450 gramm bo'yoq sarflangan bo'lsa, to'liq bo'yash uchun necha gramm bo'yoq kerak bo'ladi?
A) *625* B) *650* C) *600* D) *500*

3. Arifmetik progressiyada 10−hadi 7 ga, 7−hadi esa 10 ga teng. Progressiyaning 12−hadini toping.

A) *13* B) *6* C) *14* D) *5*

4. $\cos^2\alpha+\cos^2\beta+\cos^2(a+\beta)-2\cos a\cos\beta\cos(a+\beta)$ ifodani soddalashtiring.
A) $1-\sin a\sin\beta$ B) *1* C) *0* D) $\cos(a+\beta)$

5. Agar barcha x, y lar uchun $x^3+4x^2y+axy^2+3xy-bx^cy+7xy^2+dxy+y^2 = x^3+y^2$ tenglik bajarilsa, b−c−d ni toping.
A) *2* B) -4 C) *5* D) -2

6. y = f(x) funksiya D to'plamda noqat'iy o'suvchi bo'lsin. D to'plamdan olingan ixtiyoriy a,b elementlari uchun (a > b) quyidagi munosabatlardan qaysi biri o'rinli?
A) $f(b) \le f(a)$ B) $f(a) < f(b)$ C) $f(b) = f(a)$ D) $f(a) \le f(b)$

7. 3−4+5−6+…..+2017−2018+2019 ni hisoblang.
A) -1011 B) *1010* C) *1011* D) -1008

8. Agar a=5, b=−4 bo'lsa, $(a^3+a^2b+ab^2+b^3)(a-b)$ ifodaning qiymatini toping.
A) *330* B) *369* C) *425* D) *544*

9. $\begin{cases} EKUB(x,y) = 12 \\ \frac{x}{y} = \frac{3}{4} \end{cases}$ tenglamalar sistemasini yeching. (x, y ϵN)
A) *(48;60)* B) *(24;36)* C) *(36;48)* D) *(60;72)*

10. $\frac{2,(99)-3,2}{x} = \frac{5\frac{1}{2}-3\frac{2}{3}}{7:2}$ proporsiyadan x ni toping.
A) $\frac{49}{73}$ B) $-\frac{21}{55}$ C) $-\frac{5}{7}$ D) $\frac{22}{59}$

11. $x^{\lg^2 x - 3\lg x + 1} < 1000$ tengsizlikning eng katta natural yechimini toping.
A) *1000* B) *999* C) *1001* D) *99*

12. $\frac{|x+3|+x}{x+2} > 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *2* B) *1* C) *0* D) *3*

13. Agar a < 0 bo'lsa, $\frac{3}{x} < \frac{1}{a}$ tengsizlikni yeching.
A) $3a < x < 0$ B) $x < 3a$ C) $0 < x < 3a$ D) $x > 3a$

14. $P(x) = (3x-1)^{2017}\cdot(2x-1)^{2016}+(4x-3)^2\cdot(6x-5)^2+2$ ko'phad koeffitsiyentlarining yig'indisini toping.
A) $2^{2017}+3$ B) $2^{2017}+1$ C) *9* D) *16*

15. $y = \frac{x^2+4}{4}$ funksiyaning qiymatlar sohasiga tegishli bo'lmagan butun musbat sonlar yig'indisini toping.
A) -4 B) *0* C) *4* D) *2*

16. Agar $F(x) = \int_4^{x^2}(t^2-3)dt$ bo'lsa, F '(2) ni toping.
A) *16* B) *52* C) *26* D) *48*

17. Agar $f(x) = x^3+2ax^2+3bx+8$ va f "(3) = 22 bo'lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. $\int_{-1}^{1}(4x^5-x^3+4x)dx$ aniq integralni hisoblang.
A) *0* B) $\frac{5}{24}$ C) $\frac{7}{3}$ D) $\frac{3}{4}$

19. $\int\frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) *arcsinx+C* B) *0,5arcsinx+C* C) $\arcsin\frac{x}{2}+C$ D) $\frac{1}{2}\arcsin\frac{x}{2}+C$

20. O'tkir burchagi 45° ga, balandligi va katta asosining yigindisi a ga teng yonli trapetsiyalar ichida eng katta yuzaga ega bo'lganining kichik asosini toping.
A) $\frac{3a}{4}$ B) $\frac{5a}{4}$ C) $\frac{7a}{4}$ D) $\frac{a}{4}$

21. Konusning yasovchisi $4\sqrt{3}$ ga teng. Konusning uchida unga ichki chizilgan shar markazigacha bo'lgan masofa 4 ga teng. Konusning yasovchisi va asos tekisligi orasidagi burchakni toping.
A) $\frac{\pi}{4}$ B) $2\operatorname{arctg}\frac{1}{3}$ C) *2arctg3* D) $\frac{\pi}{3}$

22. Uchburchakning 2 ta tomoni 5 va 6 ga, ular orasidagi burchak kosinusi esa $\frac{5}{6}$ ga teng. Uchburchakning 3 – tomoniga tushirilgan balandligini toping.
A) *4* B) *5* C) *6* D) *8*

23. Muntazam to'rtburchakli prizma asosining yuzi 16 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $\frac{54}{5}\sqrt{6}$ B) $\frac{68}{5}\sqrt{6}$ C) $\frac{44}{3}\sqrt{6}$ D) $\frac{64}{3}\sqrt{6}$

24. Muntazam o'nikkiburchakli piramidaning yon qirrasi 5 ga, piramidaning balandligi 3 ga teng. Piramidaga tashqi chizilgan sferaning radiusini toping.
A) $\frac{29}{6}$ B) $\frac{5}{3}$ C) $\frac{25}{6}$ D) *4*

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(14;3). D uchining absissasi toping.
A) *15* B) *5* C) *0* D) *13*

26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. { x/xϵ N, $0 \le x < 5$ } to'plamning nechta qism to'plamlari mavjud?
A) *16* B) *4* C) *32* D) *5*

28. Agar $\frac{3^x+6^x+9^x}{5^x+10^x+15^x} = \frac{18}{50}$ bo'lsa, x ni toping.
A) *2* B) *4* C) *3* D) *5*

29. $y=\sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x+a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) $N(-a;b)$ B) $N(a;b)$ C) $N(b;a)$ D) $N(a;-b)$

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (57; 72) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va

ikkilik sanoq sistemasiga o'tkazing.
A) *10000010* B) *1110001* C) *10000111* D) *10110000*

33. A = "MSDOS.SYS – operatsion sistemani faollashtiruvchi dasturdir."
B = "Biror nomga ega bo'lgan va kompyuter tashqi xotirasida joylashgan baytlar majmuiga latalog deyiladi."
C = "Brainware – algoritmlarni ishlab chiqish, ularni tuzish usul va uslublaini o'rganish bilan bog'liq yo'nalishdir." Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C V ¬ (A B)
A) *Ba'zi mulohazalarning qiymatini aniqlab bolmaydi*
B) *Yolg'on* C) *Rost* D) *Ifodada xatolik bor*

34. MS Excel.
=ABS(Длстр(0,0123)+3начен(?(??(1235;2;3;0);2))) formulaning natijasi 18 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Левсимв, Срзнач* B) *Степень, Заменить*
C) *Сумм, Срзнач* D) *Левсимв, Сумм*

35. Quyidagi html –hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda og'ma shriftli markerlangan ro'yhat qo'llanolgan?
<table> <tr> <td colspan=2>   test
  </td> <td rowspan=2>
 test </td> </tr> <tr> <td>
  test </td> <td>
<site> test </cite> </td> </tr> </table>
A) *Ikkinchi katakda* B) *To'rtinchi katakda*
C) *Uchinchi katakda* D) *Birinchi katakda*

36. Paskal. Dastur natijasini aniqlang.
Var a, b, c: integer; k:boolean;
Begin Randomize; a:=1+random(1);
b:=1+trunc(random); k:=true;
While k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(a+b+c,k); readln; End.
A) *5FALSE* B) *8TRUE* C) *Natijani aniqlab bo'lmaydi* D) *8FALSE*

4600022

1. $y = \ln(\sin^2 2x+\cos^2 2x)$ funksiyaning eng kichik musbat davrini toping.
A) π B) $\frac{\pi}{2}$ C) 2π D) *mavjud emas*

2. Maktab hovlisida 986 ta atirgul ekilgan. Samandar barcha atirgullarning yarmini, Diyora ham barcha atirgullarning yarmini suv quyib sug'ordi. Bunda aynan uchta atirgul ham Diyora, ham Samandar tomonidan sug'orilganligi aniqlandi. Nechta atirgul sug'orilmay qoldi?
A) *6* B) *1* C) *0* D) *3*

3. Arifmetik progressiyada 10−hadi 7 ga, 7−hadi esa 10 ga teng. Progressiyaning 8−hadini toping.
A) *13* B) *9* C) *14* D) *10*

4. $\frac{tg(a+\beta)-tga-tg\beta}{tg\beta\cdot tg(a+\beta)}$ ifodaning son qiymatini toping, bu yerda $a=\frac{2\pi}{3}$, $\beta=\frac{3\pi}{5}$.
A) $-\sqrt{3}$ B) *1* C) *−1* D) $\sqrt{3}$

5. Qandaydir a, b uchun $\cos 4x=a\cos^4 x-8\cos^2 x+b$ ayniyat bajarilsa, a+b ni toping.
A) *−7* B) *3* C) *9* D) *0*

6. Agar $\log_9 25=a$, $\log_{25} 8=b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{2ab}{3}$ B) $\frac{3ab}{2}$ C) $\frac{2}{3ab}$ D) $\frac{3}{2ab}$

7. $\log_{\sqrt{6}-\sqrt{5}}(241-44\sqrt{30})$ ni hisoblang.
A) *6* B) *−5* C) *−4* D) *4*

8. $f(x) = a^2\frac{(x-b)(x-c)}{(a-b)(a-c)} + b^2\frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = 2 da hosilasini toping. (Bu yerda $(a-b)(a-c)(b-c)\neq 0$)
A) *2* B) *4* C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} y-x=3 \\ y-z=4 \\ x^2+y^2+z^2=30 \end{cases}$ tenglamalar sistemasini yeching.
A) *(3;1;4), (−2/3; −5/3; −1/3)* B) *(−3,3; −0,3; −4,3), (2;5;1)*
C) *(−10/3; −1/3; −13/3), (2;5;1)* D) *(1;4;0), (2;5;1)*

10. $(x^2+5x-5)^2-(x^2-5x-5)^2=0$ tenglamaning barcha haqiqiy ildizlari yig'indisini toping.
A) *5* B) $2\sqrt{5}$ C) *0* D) $\sqrt{5}$

11. $x\cdot 6^{\log_x 7}\le 42$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *2* B) *0* C) *1* D) *3*

12. $y=\sqrt{x^2-8x+16}+\sqrt{x^2+6x+9}$ funksiyaning eng kichik qiymatini toping.
A) *8* B) *7* C) *6* D) *5*

13. $\sqrt{3-x} > x-1$ tengsizlikni yeching.
A) *(−∞;2)* B) *(0;3]* C) *(2;3]* D) *(1;3]*

14. $(a+b)^5$ ko'phadni standart ko'rinishga keltiring va koeffitsiyentlar yig'indisini toping.
A) *32* B) *64* C) *16* D) *34*

15. y=lg(4−x) funksiyaning aniqlanish sohasini toping.
A) *(−∞;0)* B) *(−∞;2)* C) *(−∞;4)* D) *(−∞;1)*

16. $\frac{16x^2}{(1+x^2)(9x^2+1)}$ ifodaning eng katta qiymatini toping.
A) *2* B) *0,8* C) *1* D) *3*

17. Agar $f(x)=x^3+2ax^2+3bx+4$ va $f''(2)=20$ bo'lsa, a ni toping.
A) *1* B) *4* C) *3* D) *2*

18. $\int_{-1}^{1}(4x^5-x^3+4x+1)dx$ aniq integralni hisoblang.
A) *0* B) *2* C) $\frac{7}{3}$ D) $\frac{3}{4}$

19. $\int e^{\sin x}\cdot\cos x dx$ integralni hisoblang.
A) $\frac{e^{\sin x}}{\cos x}+C$ B) $e^{\sin x}+C$ C) $\cos x+e^{\sin x}+C$ D) $-e^{\sin x}+C$

20. Yon tomonlari a ga va diagonallari b ga teng bo'lgan teng yonli trapetsiya berilgan. Asoslari uzunliklari ko'paytmasini toping.
A) b^2-a^2 B) $\sqrt{b^2-a^2}$ C) $2b^2-a^2$ D) $\sqrt{b^2+a^2}$

21. ABC to'g'ri burchakli uchburchakning katta AC katetini diametr qilib yarim aylana chizilgan. AB kateti 6 ga teng. Yarim aylananing gipotenuzani kesgan nuqtasi bilan A to'g'ri burchakni tutashtiruvchi kesma 4,8 ga teng. Yarim aylana uzunligini toping.
A) *2π* B) *4π* C) *6π* D) *8π*

22. Bitta burchagi 120° bo'lgan uchburchakning tomonlari ayirmasi 1 ga teng bo'lgan arifmetik progressiyani tashkil etadi. Uchburchakning tomonlarini toping.
A) *1,5; 2,5; 3,5* B) *2; 3; 4* C) *3; 4; 5* D) *4,5; 5,5; 6,5*

23. Muntazam to'rtburchakli prizma asosining yuzi 16 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?

A) $\frac{54}{5}\sqrt{6}$ B) $\frac{68}{5}\sqrt{6}$ C) $\frac{44}{3}\sqrt{6}$ D) $\frac{64}{3}\sqrt{6}$

24. $a(-2;3)$ va $b(2;n)$ vektorlar berilgan. n ning qanday qiymatida bu vektorlar o‘zaro perpendikulyar boladi
A) $\frac{3}{4}$ B) $\frac{4}{3}$ C) $-\frac{3}{4}$ D) $-\frac{4}{3}$

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to’rtburchak yuzi 8 ga teng bo’lsa, ABCD parallelogramm yuzini toping.
A) *24* B) *16* C) *12* D) *8*

26. Koordinatalari A(−2;0), B(4;0) va C(1;3) nuqtalarda bo’lganuchburchakning Ox o’qi atrofida aylantirishdan hosil bo’lgan jismning hajmini toping.
A) 18π B) 16π C) 12π D) 15π

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko’pi bilan bitta imtihon qo’yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

28. $\frac{3\cdot 2^{2x-1}}{4^x-9^x} > 3+\left(\frac{4}{9}\right)^x$ tengsizlikni yeching.
A) $(-\frac{1}{2};0)$ B) $(0;1)$ C) $(0;\frac{1}{2})$ D) $(-1;0)$

29. y=f(x) funksiya grafigi berilgan bo’lib, uni parallel ko’chirish yordamida y=f(x−m)−n funksiya grafigi hosil qilingan. Bunday parallel ko’chirishda koordinata boshi qanday nuqtaga ko’chadi?
A) $N(-m;-n)$ B) $N(m;n)$ C) $N(-m;n)$ D) $N(m;-n)$

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o’zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo’lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo’lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig’indisini rim sanoq sistemasida hisoblang.
DCXCIX = “Norbert Viner axborotni bizni va sezgilarimizni tashqi olamga moslashuvimizdagi mazmunni ifodalash deb qaraydi”
XCVII = “XX asrning 50-yillarida informatika faniga asos solingan”
IV = “Software – bu informatikaning qismi bo’lib, texnik vositalar sifatida qaraladi”
A) *DCCVCI* B) *DCCLXXXV* C) *DCCXCIV* D) *DCCXCV*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami , so’ng 6 raqami qatnashgan barcha sonlarni o’chirib tashladi. Qolgan sonlar yig’indisini sakkizlik sanoq sistemasida aniqlang va o’nbeshlik sanoq sistemasiga o’tkazing.
A) *7B* B) *83* C) *67* D) *58*

33. A=”Boot Record−buyruq protsessoridir.” B=”Freeware−mutloqo bepul, birlamchi kodi ochiq dasturiy ta’minotdir.”
C=’’Paradox−operatsion sistemadir.” Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C or not (B or not A)
A) *Rost* B) *Yolg’on* C) *Ifodada xatolik bor*
D) *Ba’zi mulohazalarning qiymatini aniqlab bo’lmaydi*

34. MS Excel. A1=5;A2=4;A3=6;B1=4;B2==7;B3=2 bo’lsa, =?(A1:B3;”>4”)*??(A1;B3) formulaning natijasi 75 bo’lishi uchun ? va ?? belgilarining o’rniga qo’yish mumkin bo’lgan funksiyalar to’g’ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Степень*
C) *Счётесли, Мин* D) *Счётесли, Макс*

35. Faylga yo’l berilgan: C: \Mypictures\klass\picture.bmp Bosh katalogni ko’rsating.
A) *my pictures* B) *picture* C) *C:* D) *klass*

36. Paskal. Dastur natijasini aniqlang.
Var a, b, c: integer; k:boolean;
Begin Randomize; a:=1+random(1);
b:=1+trunc(random); k:=true;
While k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(a+b+c,k); readln; End.
A) *5FALSE* B) *8TRUE* C) *Natijani aniqlab bo’lmaydi* D) *8FALSE*

4600023

1. a va b natural sonlarning EKUK i 72 ga, EKUB i 12 ga teng bo’lsa, ularning ko’paytmasini toping.
A) *480* B) *360* C) *864* D) *960*

2. Axborot-resurs markazida 15 ta kompyuter o’rnatilmoqda, bunda ayrimlari kabel bilan ulanmoqda. Har bir kompyuterdan 4 ta kabel chiqishi lozim bo’lsa, jami bo’lib nechta kabel kerak?
A) *40* B) *30* C) *60* D) *24*

3. Agar $\begin{matrix} x_2+x_3+\ldots+x_{11}+x_{12}=1 \\ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \\ x_1+x_2+x_3+\ldots+x_{11}=12 \end{matrix}$ $x_1+x_3+\ldots+x_{11}+x_{12}=2$ bo’lsa, x_{11} nechaga teng?
A) $-\frac{43}{11}$ B) $-\frac{54}{11}$ C) $-\frac{78}{11}$ D) $-\frac{73}{10}$

4. Hisoblang. $\cos\frac{4\pi}{7}\cdot\cos\frac{5\pi}{7}\cdot\cos\frac{8\pi}{7}$
A) $\frac{1}{8}$ B) $\frac{1}{4}$ C) $\frac{1}{8}$ D) $\frac{1}{4}$

5. Agar barcha x, y lar uchun $x^3+4x^2y+axy^2+3xy-bx^cy+7xy^2+dxy+y^2=x^3+y^2$ tenglik bajarilsa, b−c−d ni toping.
A) *2* B) *−4* C) *5* D) *−2*

6. Har qanday (x_1,x_2) oraliq uchun y=f(x) funksiya hosilasi musbat bo'lsin. (x_1,x_2) oraliqqa tegishli ixtiyoriy a va b (a > b) uchun qanday tengsizlik o'rinli?
A) $f(b)<f(a)$ B) $0<f(a)<f(b)$ C) $f(a)<f(b)$ D) $f(b)\ge f(a)$

7. $\log_{\sqrt{6}+\sqrt{5}}(241-44\sqrt{30})$ ni hisoblang.
A) *6* B) *−5* C) *−4* D) *4*

8. $f(x)=\frac{(x-b)(x-c)}{(a-b)(a-c)}+\frac{(x-a)(x-c)}{(b-a)(b-c)}+\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = −2 dagi hosilasini toping. (Bu yerda (a−b)(a−c) ≠0)
A) *1* B) *a , b , c ga bog’liq* C) *0* D) *2*

9. $\begin{cases}|5+x|\le 9\\ |2x+5|\ge 13\end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *7* B) *4* C) *6* D) *5*

10. $(x^2+5x-5)^2-(x^2-5x-5)^2=0$ tenglamaning barcha haqiqiy ildizlari yig'indisini toping.
A) *5* B) $2\sqrt{5}$ C) *0* D) $\sqrt{5}$

11. $x^{\lg^2 x-4\lg x+1}>1000$ tengsizlikning eng kichik natural yechimini toping.
A) *10001* B) *100* C) *10000* D) *1001*

12. $4x^2+4x+1\le 0$ tengsizlik o’rinli bo’lgan barcha x haqiqiy sonlar uchun |2x+1| ifodaning qiymatini toping.
A) *2x+1* B) *−2x+1* C) *−2x−1* D) *0*

13. Agar a < 0 va b > 0 bo’lsa ax+a > bx+b tengsizlikning eng katta butun yechimini toping.
A) *2* B) *−2* C) *−1* D) *0*

14. a ning qanday qiymatida $P(x) = 2x^{12}-ax^6+4x^3-3x^2+5x+1$ ko'phadning koeffitsiyentlari yig'indisi 7 ga teng bo'ladi?
A) *−1* B) *−4* C) *2* D) *3*

15. $y = \frac{\sqrt{2x-1}+\sqrt{x-1}}{x^2-5x+8}$ funksiyaning aniqlanish sohasini toping.
A) *[1;∞)* B) *[0,5;1]* C) *[0,5;+∞)* D) *(∞;0,5]*

16. Moddiy nuqta to'g'ri chiziq bo'ylab $x(t) = \frac{t^3}{2}-3t^2+2t-2$ qonun bo'yicha harakatlanmoqda, bu yerda
x − koordinatalar boshidan nuqtagacha bo'lgan masofa (metrlarda o'lchanadi),
t − vaqt (sekundlarda o'lchanadi).
t=6 sekund bo'lganda nuqtaning tezligini (m/s) toping.
A) *23* B) *12* C) *0* D) *20*

17. Agar $f(x) = x^3 - 5x^2 + x + a$ va $f''(2) = f(2)$ bo'lsa, a ni toping.
A) *6* B) *5* C) *10* D) *12*

18. $\int_{-\frac{\pi}{3}}^{\frac{\pi}{3}}(5\sin 2x - 4\sin x)dx$ aniq integralni hisoblang.
A) $\frac{3}{4}$ B) *0* C) $\frac{\sqrt{3}}{3}-\frac{1}{2}$ D) $\frac{\sqrt{3}}{3}$

19. $\int\frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) $\frac{1}{2}\arcsin\frac{x}{2}+C$ B) $0{,}5\arcsin x + C$ C) $\arcsin\frac{x}{2}+C$ D) *arcsinx + C*

20. ABCD teng yonli trapetsiyaning AC dioganali 8 ga teng u AD katta asos bilan 15° li burchak tashkil etadi. Trapetsiyaning yuzini toping.
A) *16* B) *18* C) *20* D) *8*

21. Tekislikni kesib o'tuvchi kesmaning uchlari tekislikdan 4 va 6 masofada tursa, berilgan kesma o'rtasidan tekislikkacha bo'lgan masofani toping.
A) *4* B) *1* C) *3* D) *2*

22. y=x, y=−x va y=5 to'g'ri chiziqlar hosil qilgan uchburchak yuzini toping.
A) *5* B) *24* C) *25* D) *3*

23. M nuqta $ABCA_1B_1C_1$ muntazam prizma ABC asosidagi BC tomonning o'rtasi bo'lsin. Prizmaning yon qirrasi $\sqrt{44}$ ga, asosining tomonlari 16 ga teng bo'lsa, B_1M to'g'ri chiziq va ABB_1A_1 yon yoqi orasidagi burchakning sinusini toping.
A) $\frac{1}{2}$ B) $\frac{1}{6}$ C) $\frac{2}{3}$ D) $\frac{4}{5}$

24. Muntazzam tetraedrning balandligi 2 ga teng bo'lsa, uning to'la sirtini toping.
A) $3\sqrt{3}$ B) $8\sqrt{3}$ C) $6\sqrt{3}$ D) $12\sqrt{3}$

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;2), C(8;2). ABCD parallelogrammning yuzini toping.
A) *6* B) *14* C) *5* D) *7*

26. Koordinatalari A(−2;0), B(4;0) va C(2;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) *18π* B) *15π* C) *16π* D) *12π*

27. 12 nafar o'quvchilardan iborat guruhda 4 nafar a'zodan tashkil topgan qo'mitani tanlab olish kerak. Bu ishni nechta usulda amalga oshirsa bo'ladi?
A) *48* B) *84* C) *495* D) *120*

28. $\frac{2^{x-1}-1}{2^{x-1}+1} < 2$ tengsizlikni yeching.
A) *(−∞;0)* B) *(0;∞)* C) *(−∞;∞)* D) *Ø*

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida y=f(x−m)−n funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(−m;−n)* B) *N(m;n)* C) *N(−m;n)* D) *N(m;−n)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CVCIV = "≪Informatika≫ termini fransuz tilidagi ≪informatique≫ terminidan kelib chiqqan"
IV = "XX asrning 40-yillarida informatika faniga asos solingan"
XIX = "Informatika uchun o'rganish obyekti – bu axborot"
A) *CCIII* B) *XXIII* C) *CCXVII* D) *CCXVIII*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami , so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'nbeshlik sanoq sistemasiga o'tkazing.
A) *7B* B) *83* C) *67* D) *58*

33. To'g'ri tenglikni ko'rsating:
A) *1 Kbit=1024 bayt.* B) *1 Kbit=1000 bit.*
C) *1 Kbit=1024 bit.* D) *1 Kbit=1 bayt.*

34. MS Excel. A1=5; A2=4; A3=6; B1=4; B2=7; B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Мин*
C) *Счётесли, Макс* D) *Счётесли, Степень*

35. Faylga yo'l berilgan: C: \Mypictures\klass\picture.bmp Bosh katalogni ko'rsating.
A) *my pictures* B) *picture* C) *C:* D) *klass*

36. Paskal. Dastur natijasini aniqlang.
```
Var a, k: integer; s:string;
Begin Randomize; S:='INFORMATIKA';
a:=1; k:=0;
repeat k:=k+trunc((a+random(a))/a);
a:=a+1; until k>5;
Write(s[a]+s[k]+s[a+k]); readln; End.
```
A) *Dastur ishga tushirilganda xatolik xabari chiqadi*
B) *AM* C) *MOR* D) *MRA*

4600024

1. $0,(\overline{8a})$ davriy kasrning qiymati $\frac{28}{33}$ ga teng bo'lsa, a ning qiymatini toping (bu yerda $\overline{8a}$ ikki xonali son).
A) *1* B) *4* C) *7* D) *0*

2. Bir nechta matematiklar va 16 nafar fiziklardan tashkil topgan bir guruh olimlarning o'rtacha yoshi 40 ga teng. Matematiklarning o'rtacha yoshi 35 ga, fiziklarning o'rtacha yoshi esa 50 ga tengligi ma'lum bo'lsa, matematiklar sonini toping.
A) *30* B) *32* C) *34* D) *38*

3. Arifmetik progressiyada 10−hadi 7 ga, 7−hadi esa 10 ga teng. Progressiyaning 15−hadini toping.
A) *14* B) *2* C) *4* D) *13*

4. Hisoblang. $\cos\frac{4\pi}{7}\cdot\cos\frac{5\pi}{7}\cdot\cos\frac{8\pi}{7}$
A) $-\frac{1}{8}$ B) $-\frac{1}{4}$ C) $\frac{1}{8}$ D) $\frac{1}{4}$

5. Agar barcha x, y lar uchun $x^3+4x^2y+axy^2+3xy-bx^cy+7xy^2+dxy+y^2 = x^3+y^2$ tenglik bajarilsa, b−c−d ni toping.
A) *2* B) *−4* C) *5* D) *−2*

6. y = f(x) funksiya D to'plamda noqat'iy o'suvchi bo'lsin. D to'plamdan olingan ixtiyoriy a, b elementlari uchun (a > b) quyidagi munosabatlardan qaysi biri o'rinli?
A) $f(a) < f(b)$ B) $f(a) \geq f(b)$ C) $f(a) = f(b)$ D) $f(a) \leq f(b)$

7. $\frac{2^5\cdot 11^8}{22^{10}}\cdot\frac{34^4\cdot 2057}{17^5}$ ni hisoblang.
A) $\frac{1}{2}$ B) $\frac{2}{187}$ C) $\frac{1}{34}$ D) *2*

8. Agar x=2 bo'lsa, $f(x) = \frac{(x-b)(x-c)}{(a-b)(a-c)} + \frac{(x-a)(x-c)}{(b-a)(b-c)} + \frac{(x-a)(x-b)}{(c-a)(c-b)}$ ning qiymatini toping. (Bu yerda (a−b)(a−c)(b−c)≠0)

A) *2* B) *1* C) *a, b, c ga bog'liq* D) *0*

9. $\begin{cases} |x+4| \leq 9 \\ |2x+5| \geq 15 \end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *5* B) *4* C) *6* D) *7*

10. $2x-3\sqrt{2x-1}+1=0$ tenglamaning ildizlari yig'indisini toping.
A) *3* B) $\frac{5}{2}$ C) *2* D) $\frac{7}{2}$

11. $x^{\lg^2 x - 4\lg x + 1} < 1000$ tengsizlikning eng kichik natural yechimini toping.
A) *10001* B) *100* C) *10000* D) *1001*

12. $\frac{|x+3|+x}{x+2} > 1$ tengsizlikning manfiy butun yechimlari nechta?
A) *2* B) *1* C) *0* D) *3*

13. Agar a < 0 va b > 0 bo'lsa ax+a > bx+b tengsizlikning eng katta butun yechimini toping.
A) *2* B) *−2* C) *−1* D) *0*

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2\cdot(3x+2)^3\cdot(x-1)^{202}+(x-1)^{2000}+17$
A) *17* B) *26* C) *33* D) *−9*

15. $y = 2-\frac{1}{\sqrt{x-2}+1}$ funksiyaning qiymatlar sohasini toping.
A) *[1;∞)* B) *[1;2)* C) *[1;4]* D) *(−∞;1]*

16. Agar $f(2x-1) = 4x^3-3x^2+10x+4$ bo'lsa, f '(1) ni toping.
A) *8* B) *16* C) *4* D) *6*

17. Agar $f(x)=x^3-5x^2+2x+a$ va f ''(2)=f(2) bo'lsa, a ning qiymatini toping.
A) *5* B) *6* C) *12* D) *10*

18. $\int_{-1}^{1}(5x^5-5x^3+x+1)dx$ aniq integralni hisoblang.
A) $\frac{3}{4}$ B) *2* C) $\frac{7}{3}$ D) $\frac{5}{24}$

19. a = −4 bo'lsa, $\int_a^{a+1}(\sin^2 2x+\cos^2 2x)dx$ aniqmas integralni hisoblang.
A) $\frac{\sqrt{2}-1}{2}$ B) *1* C) $2\sqrt{2}$ D) $\sqrt{2}$

20. ABCD trapetsiyaning AD va BC asoslari mos ravishda 8 va 4 ga teng. Agar ACD uchburchakning yuzi 12 ga teng bo'lsa, berilgan trapetsiya yuzini toping.
A) *9* B) *18* C) *12* D) *24*

21. To'g'ri burchakli uchburchakda gipotenuza va kichik katetning yig'indisi 27 ga teng. Agar katta katetning uzunligi $9\sqrt{3}$ ga teng bo'lsa, unga tashqi chizilgan aylana uzunligini toping.
A) 81π B) 9π C) 36π D) 18π

22. y=x, y=−x va y=5 to'g'ri chiziqlar hosil qilgan uchburchak yuzini toping.
A) *5* B) *24* C) *25* D) *3*

23. Kubning dioganalidan ushbu dioganal bilan kesishmaydigan qirrasigacha bo'lgan masofa 4 ga teng. Kubning hajmini toping.
A) $144\sqrt{2}$ B) $240\sqrt{2}$ C) $180\sqrt{2}$ D) $128\sqrt{2}$

24. Balandligi h ga, yon yoqi va asos tekisligi orasidagi burchagi 60° ga teng bo'lgan muntazam piramidaga ichki chizilgan sharning radiusini toping.
A) $\frac{h}{3}$ B) $\frac{2h}{3}$ C) $\frac{5h}{6}$ D) $\frac{7h}{9}$

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;2), C(11;2). ABCD parallelogrammning yuzini toping.
A) *12* B) *6* C) *5* D) *10*

26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. {x/x $\in$ N, $-3,2 < x < 4,8$} to'plamning nechta qism to'plamlari mavjud?
A) *32* B) *16* C) *4* D) *8*

28. Agar $\frac{4^x+8^x+12^x}{5^x+10^x+15^x} = \frac{250}{128}$ bo'lsa, x ni toping.
A) *−3* B) *−5* C) *−4* D) *−2*

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida y=f(x−m)−n funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(−m;−n)* B) *N(m;n)* C) *N(−m;n)* D) *N(m;−n)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi: qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (57; 72) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va ikkilik sanoq sistemasiga o'tkazing.
A) *10000010* B) *1110001* C) *10000111* D) *10110000*

33. To'g'ri tenglikni ko'rsating:
A) *1 Kbit=1024 bayt.* B) *1 Kbit=1000 bit.*
C) *1 Kbit=1024 bit.* D) *1 Kbit=1 bayt.*

34. MS Excel. A1=5;A2=4;A3=6;B1=4;B2==7;B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Степень* C) *Счётесли, Мин* D) *Счётесли, Макс*

35. Quyidagi html –hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda og'ma shriftli markerlangan ro'yhat qo'llanolgan?
<table> <tr> <td colspan=2>   test
  </td> <td rowspan=2>
 test </td> </tr> <tr> <td>
  test </td> <td>
<site> test </cite> </td> </tr> </table>
A) *Ikkinchi katakda* B) *To'rtinchi katakda*
C) *Uchinchi katakda* D) *Birinchi katakda*

36. Paskal tilining quyidagi takrorlash operatorlaridagi takrorlanishlar sonini aniqlang:
I:=2014; While i<=1997 do i:=i-1;
A) *1* B) *0* C) *17* D) *18*

4600025

1. a va b natural sonlarning umumiy bo'luvchilari soni 3 ga teng bo'lsa, 3a+b va a sonlarning umumiy bo'luvchilari nechta?
A) *3* B) *4* C) *1* D) *bir qiymatli aniqlab bo'lmaydi*

2. Yuk tashish mashinasi 240 km yo'lni bosib o'tishi kerak edi. Mashina yo'lning o'rtasida 30 daqiqa to'xtab qolgach tezligini 20 km/soat ga oshirib, belgilangan joyga o'z vaqtida yetib keldi. Mashina yo'lning ikkinchi yarmini bosib o'tishiga ketgan vaqtni (soat) toping.
A) *1,5* B) *2* C) *1,2* D) *1,4*

3. Musbat sonlardan tashkil topgan $a_1, a_2, a_3, \ldots$ ketma–ketlik uchun $a_1=a_2=1$ va barcha natural n larda $a_{n+2}=a_n \cdot a_{n+1}$ shartlar bajarilsin. Ketma–ketlikning 90–hadini toping.
A) *1* B) *10* C) *0* D) *1050*

4. Agar $tg4\alpha = -\frac{1}{3}$ bo'lsa, $ctg\alpha - tg\alpha - 2tg2\alpha$ ning qiymatini toping.
A) *−6* B) *−2* C) *−8* D) *−12*

5. Qandaydir a, b uchun $\cos 4x = a\cos^4 x - 8\cos^2 x + b$ ayniyat bajarilsa, a ni toping.
A) *−8* B) *4* C) *−4* D) *8*

6. Agar $\log_3 25 = a$, $\log_{25} 8 = b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{ab}{3}$ B) $\frac{1}{3ab}$ C) $\frac{3}{ab}$ D) $\frac{3ab}{2}$

7. $\log_{\sqrt{6}+\sqrt{5}}(241 - 44\sqrt{30})$ ni hisoblang.
A) *6* B) *−5* C) *−4* D) *4*

8. Agar x=y+4 bo'lsa, $\frac{x^2 + 3y - 3x - xy}{2x - 6}$ ifodaning qiymatini toping.
A) *3,5* B) *4* C) *2* D) *2,5*

9. $\begin{cases} |5 + x| \le 9 \\ |2x + 5| \ge 13 \end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *7* B) *4* C) *6* D) *5*

10. $2x - 3\sqrt{2x - 1} + 1 = 0$ tenglamaning ildizlari yig'indisini toping.
A) *3* B) *2,5* C) *2* D) *3,5*

11. $x \cdot 2^{\log_x 3} < 6$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *1* B) *3* C) *0* D) *2*

12. $4x^2+4x+1 \le 0$ tengsizlik o'rinli bo'lgan barcha x haqiqiy sonlar uchun $|2x+1|$ ifodaning qiymatini toping.
A) *2x+1* B) *−2x+1* C) *−2x−1* D) *0*

13. $x^6 - 28x^3 + 27 \le 0$ tengsizlik nechta butun yechimga ega?
A) *1* B) *3* C) *27* D) *cheksiz ko'p*

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2 \cdot (3x+2)^3 \cdot (x-1)^{202} + (x-1)^{2000} + 17$
A) *17* B) *26* C) *33* D) *−9*

15. $y=\lg(4-x)$ funksiyaning aniqlanish sohasini toping.
A) *(−∞;0)* B) *(−∞;2)* C) *(−∞;4)* D) *(−∞;1)*

16. Agar $f(x) = x^{5x}$ bo'lsa, f '(x) ni toping.
A) $x^{5x}(5+\ln x)$ B) $x^{5x}(1+\ln x)$ C) $5x^{5x}(1+\ln x)$ D) $5x^{5x}(1+5\ln x)$

17. Agar $f(x)=x^3-5x^2+2x+a$ va $f''(2)=f(2)$ bo'lsa, a ning qiymatini toping.
A) *5* B) *6* C) *12* D) *10*

18. $\int_{-\frac{\pi}{3}}^{\frac{\pi}{3}} (5\sin 2x - 4\sin x)dx$ aniq integralni hisoblang.
A) $\frac{3}{4}$ B) *0* C) $\frac{\sqrt{3}}{3} - \frac{1}{2}$ D) $\frac{\sqrt{3}}{3}$

19. $\int e^{2\sin x} \cdot \cos x dx$ integralni hisoblang.
A) $\frac{e^{\sin x}}{2\cos x} + C$ B) $\frac{1}{2}e^{2\sin x} + C$ C) $e^{2\sin x} + \cos x + C$ D) $-\frac{1}{2}e^{2\sin x} + C$

20. O'tkir burchagi 45° ga, balandligi va katta asosining yigindisi a ga teng yonli trapetsiyalar ichida eng katta yuzaga ega bo'lganining kichik asosini toping.
A) $\frac{3a}{4}$ B) $\frac{5a}{4}$ C) $\frac{7a}{4}$ D) $\frac{a}{4}$

21. ABC to'g'ri burchakli uchburchakning katta AC katetini diametr qilib yarim aylana chizilgan. AB kateti 6 ga teng. Yarim aylananing gipotenuzani kesgan nuqtasi bilan A to'g'ri burchakni tutashtiruvchi kesma 4,8 ga teng. Yarim aylana uzunligini toping.
A) *2π* B) *4π* C) *6π* D) *8π*

22. Quyidagi keltirilgan jumlalardan noto'g'risini toping.
A) *Agar ikki uchburchakning bir tomoni va ikkita burchagi mos ravishda teng bo'lsa, bu uchburchaklar teng bo'ladi.*
B) *Teng tomonli uchburchak teng yonli uchburchak ham bo'ladi.*
C) *Uchburchakning bir uchi va shu uchining qarshisidagi tomon o'rtasini tutashtiruvchi kesma uning medianasi deyiladi.*
D) *Kesma o'rta perpendikulyarining ixtiyoriy nuqtasi kesma uchlaridan teng uzoqlikda joylashgan.*

23. M nuqta $ABCA_1B_1C_1$ muntazam prizma ABC asosidagi BC tomonning o'rtasi bo'lsin. Prizmaning yon qirrasi $\sqrt{44}$ ga, asosining tomonlari 16 ga teng bo'lsa, B_1M to'g'ri chiziq va ABB_1A_1 yon yoqi orasidagi burchakning sinusini toping.
A) $\frac{1}{2}$ B) $\frac{3}{5}$ C) $\frac{2}{3}$ D) $\frac{4}{5}$

24. Muntazam o'nsakkizburchakli piramidaning yon qirrasi 8 ga, piramidaning balandligi 6 ga teng. Piramidaga tashqi chizilgan sferaning radiusini toping.
A) $\frac{16}{3}$ B) $\frac{10}{3}$ C) $\frac{17}{3}$ D) $\frac{20}{3}$

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;2), C(8;2). ABCD parallelogrammning yuzini toping.
A) *6* B) *14* C) *5* D) *7*

26. Koordinatalari A(2;0), B(8;0) va C(4;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) *18π* B) *16π* C) *15π* D) *12π*

27. Bir kunlik dars jadvalida turli fanlar bo'yicha 4 ta dars bor. 9 ta fandan iborat bo'lgan shunday jadvallar sonini toping.
A) *3024* B) *126* C) *4940* D) *504*

28. k N da $B_k=x^k+y^k$ darajali yig'indi, $o_1=x+y$, $o_2=xy$ bo'lsa, u holda quyidagi qaysi munosabat doim o'rinli?
A) $B_3=B_1o_1-B_2o_2$ B) $B_3=B_2o_1-B_1o_2$ C) $B_3=B_2o_2+B_1o_1$ D) $B_3=B_2o_1+B_1o_2$

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida y=f(x−m)−n funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(−m;−n)* B) *N(m;n)* C) *N(−m;n)* D) *N(m;−n)*

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (57; 72) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va ikkilik sanoq sistemasiga o'tkazing.
A) *10000010* B) *1110001* C) *10000111* D) *10110000*

33. A = "BIOS – ma'lumotlarni kiritish va chiqarish dasturidir."
B = "Shareware – sinovdan o'tkazish muddatiga ega bo'lgan dasturlardir."
C = "Doppix dasturi operatsion sistemadir."
SHu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
not (A or (not B and C))
A) *Yolg'on* B) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*
C) *Rost* D) *Ifodada xatolik bor*

34. MS Excel. A1=5;A2=4;A3=6;B1=4;B2==7;B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Степень*
C) *Счётесли, Мин* D) *Счётесли, Макс*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?
<table> <tr> <td> <cite> <u> test </u>
 </cite> </td> <td colspan=3>
 test </td> </tr> <tr> <td colspan=2>
  test </td>
<td> <u> test </u> </td> <td>
   test </td> </tr> </table>
A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal. Dastur natijasini aniqlang.
Var a,b,c: integer; k:boolean; s:string;
Begin Randomize; S:=´INFORMATIKA´;
a:=1+random(1); b:=1+trunc(random); k:=true;
while k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(s[a]+s[b]+s[c]); readln; End.
A) *NON* B) *IFA* C) *Natijani aniqlab bo'lmaydi* D) *IIF*

4600026

1. $\alpha = 30°$; $a = (tg\alpha)^{tg\alpha}$, $b = (ctg\alpha)^{ctg\alpha}$, $c = (ctg\alpha)^{tg\alpha}$ bo'lsa, quyidagilardan qaysi biri o'rinli?
A) $a > b > c$ B) $c > b > a$ C) $b > a > c$ D) $b > c > a$

2. Sotuvchi mahsulotni A so'mdan sotmoqda. Agar mahsulot narxini 20% ga oshirib, so'ngra 20% ga kamaytirilsa, u holda sotuvchi foyda ko'radimi yoki zarar?
A) *4% foyda* B) *2% zarar* C) *2% foyda* D) *4% zarar*

3. $a_1, a_2, \ldots$ va $b_1, b_2, \ldots$ – arifmetik progressiyalar uchun $a_1=2$, 5, $b_1=7,5$, $a_{100}+b_{100}=10$ bo'lsin. $a_1+b_1, a_2+b_2, \ldots$ ketma-ketlikning dastlabki 100 ta hadlar yig'indisini toping.
A) *100* B) *1000* C) *0* D) *10*

4. Agar $tg\alpha=-4$ bo'lsa, $\frac{2\cos 2a-1}{2-9\cos^2 a}$ ning qiymatini toping.
A) *−0,5* B) *−9,5* C) *−3,16* D) *−1,88*

5. Qandaydir a, b uchun $\cos 4x = a\cos^4 x - 8\cos^2 x + b$ ayniyat bajarilsa, a ni toping.
A) *−8* B) *4* C) *−4* D) *8*

6. Har qanday (x_1,x_2) oraliq uchun y=f(x) funksiya hosilasi musbat bo'lsin. (x_1,x_2) oraliqqa tegishli ixtiyoriy a va b (a > b) uchun qanday tengsizlik o'rinli?
A) *f(b) < f(a)* B) *0 < f(a) < f(b)* C) *f(a) < f(b)* D) *f(b) ≥ f(a)*

7. 3−4+5−6+…..+2017−2018+2019 ni hisoblang.
A) *−1011* B) *1010* C) *1011* D) *−1008*

8. Agar a=5, b=−4 bo'lsa, $(a^3+a^2b+ab^2+b^3)(a-b)$ ifodaning qiymatini toping.
A) *330* B) *369* C) *425* D) *544*

9. $\begin{cases} |x+6| \le 10 \\ |2x+7| \ge 15 \end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *8* B) *4* C) *6* D) *7*

10. $x^2-\sqrt{x^2-4x+4}=-2$ tenglamaning haqiqiy idizlari sonini toping.
A) *4* B) *2* C) *1* D) *3*

11. $x\cdot 2^{\log_x 3} < 6$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *1* B) *3* C) *0* D) *2*

12. $\sqrt{x+2}+|x-4| \le 6$ tengsizlikning butun sonlardan iborat yechimlari yig'indisini toping.
A) *−2* B) *18* C) *25* D) *6*

13. $\sqrt{3-x} > x-1$ tengsizlikni yeching.
A) *(−∞;2)* B) *(0;3]* C) *(2;3]* D) *(1;3]*

14. $(a+b)^5$ ko'phadni standart ko'rinishga keltiring va koeffitsiyentlar yig'indisini toping.
A) *32* B) *64* C) *16* D) *34*

15. y=lg(4−x) funksiyaning aniqlanish sohasini toping.
A) *(−∞;0)* B) *(−∞;2)* C) *(−∞;4)* D) *(−∞;1)*

16. $y = x^3\cdot(x^3-54)$ funksiya ekstrimumini toping.
A) *−729* B) *−243* C) *−729;0* D) *−243;0*

17. Agar $f(x) = x^3 - 5x^2 + x + a$ va $f''(2) = f(2)$ bo'lsa, a ni toping.
A) *6* B) *5* C) *10* D) *12*

18. $\int_1^e \frac{4}{x}dx$ integralni hisoblang.
A) *18ln2* B) *12ln2* C) *6ln2* D) *12ln4*

19. $y = -2\sqrt{x}$ va $y = -2x^3$ egri chiziqlar bilan chegaralangan soha yuzini toping.
A) $\frac{5}{3}$ B) $\frac{5}{6}$ C) $\frac{5}{4}$ D) $\frac{5}{12}$

20. ABCD trapetsiyaning AD va BC asoslari mos ravishda 8 va 4 ga teng. Agar ACD uchburchakning yuzi 12 ga teng bo'lsa, berilgan trapetsiya yuzini toping.
A) *9* B) *18* C) *12* D) *24*

21. To'g'ri burchakli uchburchakda gipotenuza va kichik katetning yig'indisi 27 ga teng. Agar katta katetning uzunligi $9\sqrt{3}$ ga teng bo'lsa, unga tashqi chizilgan aylana uzunligini toping.
A) 81π B) 9π C) 36π D) 18π

22. Uchburchakning 2 ta tomoni 5 va 6 ga, ular orasidagi burchak kosinusi esa $\frac{5}{6}$ ga teng. Uchburchakning 3 – tomoniga tushirilgan balandligini toping.
A) *4* B) *5* C) *6* D) *8*

23. Muntazam to'rtburchakli prizma asosining yuzi 36 ga teng. Agar prizmaning dioganali yon qirrasi bilan 60° li burchak tashkil etsa, prizmaning yon sirti nimaga teng?
A) $48\sqrt{6}$ B) $30\sqrt{6}$ C) $42\sqrt{6}$ D) $40\sqrt{6}$

24. Piramidaning asosi tomoni $2\sqrt{3}$ va o'tkir burchagi 30° ga teng bo'lgan rombdan iborat. Ushbu piramidaga ichki chizilgan konusning yasovchisi asos tekisligi bilan 60° li burchak tashkil etadi. Konus hajmining piramida hajmiga nisbatini toping.
A) $\frac{\pi}{4}$ B) $\frac{\sqrt{3}\pi}{4}$ C) $\frac{\pi}{8}$ D) $\frac{\sqrt{3}\pi}{8}$

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(14;3). D uchining absissasi va ordinatasining yig'indisini toping.
A) *0* B) *5* C) *14* D) *15*

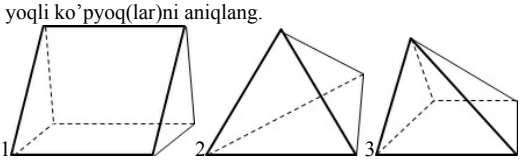
26. Koordinatalari A(−2;0), B(4;0) va C(1;3) nuqtalarda bo'lganuchburchakning Ox o'qi atrofida aylantirishdan hosil bo'lgan jismning hajmini toping.
A) 18π B) 16π C) 12π D) 15π

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko'pi bilan bitta imtihon qo'yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

28. $k\in N$ da $B_k=x^k+y^k$ darajali yig'indi, $o_1=x+y$, $o_2=xy$ bo'lsa, u holda quyidagi qaysi munosabat doim o'rinli?
A) $B_3=B_1o_1-B_2o_2$ B) $B_3=B_2o_1-B_1o_2$ C) $B_3=B_2o_2+B_1o_1$ D) $B_3=B_2o_1+B_1o_2$

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x-a)-b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N (a; −b)* B) *N (b;a)* C) *N (a;b)* D) *N (−a;b)*

30. Besh yoqli ko'pyoq(lar)ni aniqlang.



A) *1, 3* B) *1* C) *3* D) *2*

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi:
qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (73; 100) oraliqdagi bacha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'n ikkilik sanoq sistemasiga o'tkazing.
A) *94* B) *71* C) *7B* D) *A3*

33. To'g'ri tenglikni ko'rsating:
A) *1 Kbit=1024 bayt.* B) *1 Kbit=1000 bit.*
C) *1 Kbit=1024 bit.* D) *1 Kbit=1 bayt.*

34. MS Excel.=?(-23;6)-ЗНАЧЕН(ЗАМЕНИТЬ??(-23;6);2;2;6)) formulaning natijasi 67 bo'lishi uchun? va ?? belgilarini o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Остат, Заменить* B) *Остат, Сцепить* C) *Мин* D) *Мин, Макс*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?
<table> <tr> <td> <cite> <u> test </u>
 </cite> </td> <td colspan=3>
 test </td> </tr> <tr> <td colspan=2>
  test </td>
<td> <u> test </u> </td> <td>
   test </td> </tr> </table>
A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal tilining quyidagi takrorlash operatorlaridagi takrorlanishlar sonini aniqlang:
I:=2014; While i<=1997 do i:=i-1;
A) *1* B) *0* C) *17* D) *18*

4600027

1. $y=\ln(\sin^2 2x+\cos^2 2x)$ funksiyaning eng kichik musbat davrini toping.
A) π B) $\frac{\pi}{2}$ C) 2π D) *mavjud emas*

2. Quti sirtining 70% ini bo'yash uchun 350 gramm bo'yoq sarflandi. Qutining qolgan qismini bo'yash uchun necha gramm bo'yoq kerak bo'ladi?
A) *150* B) *50* C) *100* D) *500*

3. $a_1, a_2, \ldots$ va $b_1, b_2, \ldots$ – arifmetik progressiyalar uchun $a_1=2$, 5, $b_1=7{,}5$, $a_{100}+b_{100}=10$ bo'lsin. a_1+b_1, $a_2+b_2, \ldots$ ketma-ketlikning dastlabki 100 ta hadlar yig'indisini toping.
A) *100* B) *1000* C) *0* D) *10*

4. Agar $\operatorname{tg}a=-4$ bo'lsa, $\frac{3\cos 2a-2}{2-9\cos^2 a}$ ning qiymatini toping.
A) *−0,94* B) *−0,5* C) *−3,16* D) *−9,5*

5. Qandaydir a, b, c uchun $\cos 4x = a\cos^4 x+b\cos^2 x+c$ ayniyat bajarilsa, a+b ni toping.
A) *0* B) *−4* C) *1* D) *3*

6. Agar $\log_3 25 = a$, $\log_{25} 8 = b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{ab}{3}$ B) $\frac{1}{3ab}$ C) $\frac{3}{ab}$ D) $\frac{3ab}{2}$

7. $\log_{\sqrt{3}+\sqrt{2}}(49-20\sqrt{6})$ ni hisoblang.
A) *5* B) *−5* C) *−4* D) *6*

8. Agar a=5, b=−4 bo'lsa, $(a^3+a^2b+ab^2+b^3)(a-b)$ ifodaning qiymatini toping.
A) *330* B) *369* C) *425* D) *544*

9. (x;y) juftlik $\begin{cases} EKUB(x,y)=12 \\ \frac{x}{y}=\frac{3}{4} \end{cases}$ tenglamalar sistemasining yechimi bo'lsa, x+y ni hisoblang ($x,y\in N$)
A) *84* B) *108* C) *168* D) *216*

10. $(x^2+3x-3)^2-(x^2-3x-3)^2 = 0$ tenglamaning barcha haqiqiy ildizlari yig'indisini toping.
A) *0* B) *3* C) $\sqrt{3}$ D) $2\sqrt{3}$

11. $64-x^{5-\log_2 x}=0$ tenglamaning ildizlari ko'paytmasini toping.
A) *8* B) *64* C) *32* D) *16*

12. $4x^2+4x+1\le 0$ tengsizlik o'rinli bo'lgan barcha x haqiqiy sonlar uchun $|2x+1|$ ifodaning qiymatini toping.
A) *2x+1* B) *−2x+1* C) *−2x−1* D) *0*

13. $x < 6$ bo'lsa, $3x+4y-6 = 0$ tenglamadan y ning qiymatlarini toping.
A) $y > -6$ B) $y < -6$ C) $y > -3$ D) $-1 < y < 1$

14. $P(x) = (3x-1)^{2017}\cdot(2x-1)^{2016}+(4x-3)^2\cdot(6x-5)^2+2$ ko'phad koeffitsiyentlarining yig'indisini toping.
A) $2^{2017}+3$ B) $2^{2017}+1$ C) *9* D) *16*

15. $y = \dfrac{x^2+16}{x}$ funksiyaning qiymatlar sohasiga tegishli bo'lmagan butun sonlar yig'indisini toping.
A) *−8* B) *−2* C) *4* D) *0*

16. $y = x^3\cdot(x^3-54)$ funksiya ekstrimumini toping.
A) *−729* B) *−243* C) *−729;0* D) *−243;0*

17. Agar $f(x) = x^3+2ax^2+3bx+8$ va $f''(3) = 22$ bo'lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. $\int_{-\frac{\pi}{3}}^{\frac{\pi}{3}}(\sin 2x-\sin x)dx$ aniq integralni hisoblang.
A) $\dfrac{\sqrt{3}}{3}$ B) *0* C) $\dfrac{3}{4}$ D) $\dfrac{\sqrt{3}}{3}-\dfrac{1}{2}$

19. $\int e^{\sin x}\cdot\cos x dx$ integralni hisoblang.
A) $\dfrac{e^{2\sin x}}{2\cos x}+C$ B) $e^{\sin x}+C$ C) $\cos x+e^{2\sin x}+C$ D) $-\dfrac{1}{2}e^{\sin x}+C$

20. Diagonallari 90° burchak ostida kesishuvchi ABCD trapetsiyaning asoslari mos ravishda 8 va 2 ga teng. Dioganallarining kesishish nuqtasidan asoslariga parallel to'g'ri chiziq o'tkazilgan. Ushbu to'g'ri chiziqning yon tomonlar bilan chegaralangan kesmasi uzunligini toping.
A) *3,2* B) *1,6* C) *1,8* D) *3,25*

21. Tomonlari 15 va 18 ga teng bo'lgan to'g'ri to'rtburchak birlik kvadratlarga bo'lingan. Uning diagonali birlik kvadratchalarning uchlari bo'linish nuqtalarning nechtasidan o'tadi?
A) *1* B) *0* C) *3* D) *4*

22. Asosi a ga, yon tomoni b ga teng bo'lgan teng yonli uchburchakning yon tomoniga tushirilgan bissektrisa uzunligini toping.
A) $l_b = \dfrac{b}{a+b}\sqrt{2a^2+ab}$ B) $l_b = \dfrac{b}{a+b}\sqrt{2b^2+ab}$
C) $l_b = \dfrac{a}{a+b}\sqrt{2b^2+ab}$ D) $l_b = \dfrac{a}{a+b}\sqrt{2a^2+ab}$

23. Kubning dioganalidan ushbu dioganal bilan kesishmaydigan qirrasigacha bo'lgan masofa 4 ga teng. Kubning hajmini toping.
A) $144\sqrt{2}$ B) $240\sqrt{2}$ C) $180\sqrt{2}$ D) $128\sqrt{2}$

24. $a(-2;3)$ va $b(2;n)$ vektorlar berilgan. n ning qanday qiymatida bu vektorlar o'zaro perpendikulyar boladi
A) $\dfrac{3}{4}$ B) $\dfrac{4}{3}$ C) $-\dfrac{3}{4}$ D) $-\dfrac{4}{3}$

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to'rtburchak yuzi 6 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *12* B) *25* C) *6* D) *9*

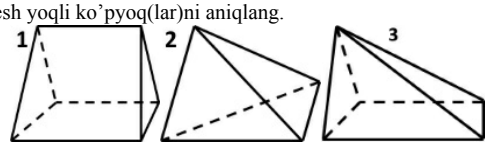
26. Koordinatalari A(−2;0), B(4;0) va C(1;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirishdan hosil bo'lgan jismning hajmini toping.
A) 18π B) 16π C) 12π D) 15π

27. $\{ x/x\in N, x^2 < 32 \}$ to'plamni nechta usul bilan ikkita kesishmaydigan qism to'plamlar birlashmasi ko'rinishida ifodalash mumkin?
A) *5* B) *31* C) *32* D) *16*

28. $\dfrac{2^x-3^x}{3\cdot 2^{x-1}} > 3+\left(\dfrac{2}{3}\right)^x$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *2* B) *0* C) *3* D) *1*

29. $y = \ln^3 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y = \ln^3(x-a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi? Bunda, $x > a$, $x > 0$
A) *N(a;−b)* B) *N(a;b)* C) *N(−a;b)* D) *N(b;a)*

30. Besh yoqli ko'pyoq(lar)ni aniqlang.



A) *1, 3* B) *1* C) *3* D) *2*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'n uchlik sanoq sistemasiga o'tkazing.
A) *73* B) *65* C) *96* D) *89*

33. A="Boot Record–buyruq protsessoridir." B="Freeware–mutloqo bepul, birlamchi kodi ochiq dasturiy ta'minotdir."
C="'Paradox–operatsion sistemadir." Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
C or not (B or not A)
A) *Rost* B) *Yolg'on* C) *Ifodada xatolik bor*
D) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*

34. MS Excel, A1=5; A2=4; A3=6; B1=4; B2=7; B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Мин*
C) *Счётесли, Макс* D) *Счётесли, Степень*

35. Quyidagi html –hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda og'ma shriftli markerlangan ro'yhat qo'llanolgan?
<table> <tr> <td colspan=2>   test
  </td> <td rowspan=2>
 test </td> </tr> <tr> <td>
  test </td> <td>
<site> test </cite> </td> </tr> </table>
A) *Ikkinchi katakda* B) *To'rtinchi katakda*
C) *Uchinchi katakda* D) *Birinchi katakda*

36. Paskal. Dastur natijasini aniqlang.
```
Var p,k: longint; s:string;
F:array[1..11] of integer;
Begin Randomize; S:='INFORMATIKA';
P:=1; k:=0; repeat k:=k+1;
F[k]:=round((k+random(k))/(k+1.1));
P:=p*F[k]; until k>=6;
Write(s[p+2]+s[f[3]]+s[k]); readln; End.
```
A) *Natijani aniqlab bo'lmaydi* B) *NMO* C) *NIM* D) *OIM*

4600028

1. Taqqoslang: $a=40^{15}$ va $b=25^{15}+15^{15}$
A) $a=b$ B) $a>b$ C) $a+20<b$ D) $a<b$

2. To'p 2 m 43 sm balandlikdan tashlandi va yerga urilib, har gal balandligining 2/3 qismiga teng balandlikka ko'tarildi. To'p necha marta urilishdan keyin 32 sm balandlikka ko'tariladi? (32 sm dan yuqoriga o'tib ketadigan hollarni qaramang.)
A) *5* B) *8* C) *4* D) *7*

3. $2+5+8+\ldots..+x=100$ tenglamani qanoatlantiradigan x musbat butun sonni toping.
A) *17* B) *20* C) *29* D) *23*

4. $\dfrac{tg(a+b)-tga-tgb}{tgb\cdot tg(a+b)}$ ifodaning son qiymatini toping, bu yerda $a=\dfrac{2\pi}{3}$, $b=\dfrac{3\pi}{5}$.
A) *1* B) *−1* C) $-\sqrt{3}$ D) $\sqrt{3}$

5. Qandaydir a, b, c uchun $\cos 4x = a\cos^4 x+b\cos^2 x+c$ ayniyat bajarilsa, a+b ni toping.
A) *0* B) *−4* C) *1* D) *3*

6. Agar $\log_3 25 = a$, $\log_{25} 8 = b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\dfrac{ab}{3}$ B) $\dfrac{1}{3ab}$ C) $\dfrac{3}{ab}$ D) $\dfrac{3ab}{2}$

7. $5\cdot[12\frac{2}{7}+5\frac{3}{7}]-8\cdot[3\frac{2}{3}]\cdot[2,(9)]$ ni hisoblang. Bu yerda [a] – a sonning butun qismi.
A) *37* B) *12* C) *13* D) *15*

8. Agar a=5, b=−4 bo'lsa, $(a^3+a^2b+ab^2+b^3)(a-b)$ ifodaning qiymatini toping.
A) *330* B) *369* C) *425* D) *544*

9. $\begin{cases} |5+x| \le 9 \\ |2x+5| \ge 13 \end{cases}$ tengsizliklar sistemasi nechta butun yechimga ega?
A) *7* B) *4* C) *6* D) *5*

10. $x^2-\sqrt{x^2-4x+4}=-2$ tenglamaning haqiqiy idizlari sonini toping.
A) *4* B) *2* C) *1* D) *3*

11. $x\cdot 6^{\log_x 7} \le 42$ tengsizlikning butun sonlardan iborat yechimlari nechta?
A) *2* B) *0* C) *1* D) *3*

12. $\sqrt{x+2}+|x-4| \le 6$ tengsizlikning butun sonlardan iborat yechimlari yig'indisini toping.
A) *−2* B) *18* C) *25* D) *6*

13. $2x+8 \le x^2 < 6x$ tengsizlikning butun yechimlari yig'indisini toping.
A) *12* B) *9* C) *6* D) *10*

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2\cdot(3x+2)^3\cdot(x-1)^{202}+(x-1)^{2000}+17$
A) *17* B) *26* C) *33* D) *−9*

15. $f(x)= 3\cos x-4\sin x+3$ funksiyaning qiymatlar sohasini toping.
A) *[−4;6]* B) *[−3;7]* C) *[−5;5]* D) *[−2;8]*

16. $\dfrac{16x^2}{(1+x^2)(9x^2+1)}$ ifodaning eng katta qiymatini toping.
A) *2* B) *0,8* C) *1* D) *3*

17. Agar $f(x)=x^3+2ax^2+3bx+8$ va $f''(3)=22$ bo'lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. Agar $\int_a^b (4x+5)dx = 175$ va a+b=10 bo'lsa, b−a ni toping.
A) *6* B) *7* C) *9* D) *2*

19. $\int \dfrac{dx}{3+x^2}$ ni hisoblang.
A) $\dfrac{1}{\sqrt{3}}arctgx+C$ B) $\dfrac{1}{3}arctg\dfrac{x}{3}+C$
C) $\dfrac{1}{\sqrt{3}}arctg\dfrac{x}{3}+C$ D) $\dfrac{1}{\sqrt{3}}arctg\dfrac{x}{\sqrt{3}}+C$

20. Teng yonli trapetsiyaning dioganali o'tkir burchak bissektrisasidir. Trapetsiyaning asoslari uzunliklari 2:3 kabi nisbatda, perimetri esa 12 ga teng. Trapetsiyaning o'rta chizig'ini toping.
A) $\dfrac{7}{2}$ B) $\dfrac{10}{3}$ C) $\dfrac{7}{3}$ D) *3*

21. Radiusi 3 ga teng bo'lgan sharga yasovchisi 5 ga teng bo'lgan konus ichki chizilgan. Konus yasovchisining asos tekisligi bilan tashkil etgan burchak sinusini toping.
A) $\dfrac{5}{6}$ B) $\dfrac{5}{12}$ C) $\dfrac{5}{18}$ D) $\dfrac{4}{5}$

22. Uchburchakning 2 ta tomoni 5 va 6 ga, ular orasidagi burchak kosinusi esa $\dfrac{5}{6}$ ga teng. Uchburchakning 3 – tomoniga tushirilgan balandligini toping.
A) *4* B) *5* C) *6* D) *8*

23. Kubning dioganalidan ushbu dioganal bilan kesishmaydigan qirrasigacha bo'lgan masofa 4 ga teng. Kubning hajmini toping.
A) $144\sqrt{2}$ B) $240\sqrt{2}$ C) $180\sqrt{2}$ D) $128\sqrt{2}$

24. Piramidaning asosi, tomoni $4\sqrt{3}$ o'tkir burchagi 45° ga teng bo'lgan romdan iborat. Ushbu piramidaga ichki chizilgan konusning yasovchisi asos tekisligi bilan 60° li burchak tashkil etadi. Konusning hajmini toping.
A) $6\sqrt{2}\pi$ B) 3π C) $6\sqrt{3}\pi$ D) 6π

25. ABCD parallelogramm uchta uchining koordinatalari ma'lum: A(0;1), B(1;3), C(14;3). D uchining absissasi va ordinatasining yig'indisini toping.
A) *0* B) *5* C) *14* D) *15*

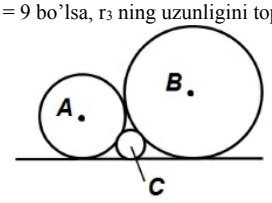
26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. { $x/x\in N, 0 \le x < 5$ } to'plamning nechta qism to'plamlari mavjud?
A) *16* B) *4* C) *32* D) *5*

28. Agar $\dfrac{3^x+6^x+9^x}{5^x+10^x+15^x}=\dfrac{50}{18}$ bo'lsa, x ni toping.
A) *−4* B) *−2* C) *−3* D) *−5*

29. $y=\sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y=\sin^2(x+a)+b$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(a;−b)* B) *N(−a;b)* C) *N(a;b)* D) *N(b;a)*

30. Umumiy urinmaga ega bo'lgan A, B, C markazli aylanalar o'zaro tashqi urinadilar. Ularning radiuslari mos ravishda r_1, r_2 va r_3 bo'lsin. Agar $r_1 = 4$ va $r_2 = 9$ bo'lsa, r_3 ning uzunligini toping.



A) $\frac{49}{36}$ B) $\frac{26}{21}$ C) $\frac{36}{25}$ D) $\frac{32}{23}$

31. Rost mulohazalarga mos sonlar yig'indisini rim sanoq sistemasida aniqlang:
CIX = "Soat millarining harakati uzkukli axborotga misol bo'ladi"
XCVII = "Insonga uzluksiz ta'sir etib turuvchi axborotlar diskret axborotlar deb ataladi"
XLIX = "Axborot xususiyatlariga quyidagilar kiradi:
qimmatlilik, ishonchlilik, to'liqlik"
A) *CLVIII* B) *CCVI* C) *CCLV* D) *CXLVI*

32. Ali sakkizlik sanoq sistemasida (73; 100) oraliqdagi bacha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami, so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'n ikkilik sanoq sistemasiga o'tkazing.
A) *94* B) *71* C) *7B* D) *A3*

33. Informatika o'rganadigan asosiy ashyoni aniqlang.
A) *algoritm* B) *dastur* C) *kompyuter* D) *axborot*

34. MS Excel. A1=5;A2=4;A3=6;B1=4;B2==7;B3=2 bo'lsa, =?(A1:B3;">4")*??(A1;B3) formulaning natijasi 75 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Счётесли, Срзнач* B) *Счётесли, Степень*
C) *Счётесли, Мин* D) *Счётесли, Макс*

35. Faylga yo'l berilgan: C: \Mypictures\klass\picture.bmp Bosh katalogni ko'rsating.
A) *my pictures* B) *picture* C) *C:* D) *klass*

36. Paskal. Dastur natijasini aniqlang.
Var a, b, c: integer; k:boolean;
Begin Randomize; a:=1+random(1);
b:=1+trunc(random); k:=true;
While k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(a+b+c,k); readln; End.
A) *5FALSE* B) *8TRUE* C) *Natijani aniqlab bo'lmaydi* D) *8FALSE*

4600029

1. m, n natural sonlar $m^2=n^2+173$ tenglikni qanoatlantirsa, m−n ni toping.
A) *1* B) *12* C) *173* D) *aniqlab bo'lmaydi*

2. Quti sirtining 75% ini bo'yash uchun 450 gramm bo'yoq sarflangan bo'lsa, to'liq bo'yash uchun necha gramm bo'yoq kerak bo'ladi?
A) *625* B) *650* C) *600* D) *500*

3. Agar $\begin{matrix} x_2 + x_3 + \ldots + x_{11} + x_{12} = 1 \\ x_1 + x_3 + \ldots + x_{11} + x_{12} = 2 \\ \ldots\ldots\ldots\ldots\ldots\ldots\ldots \\ x_1 + x_2 + x_3 + \ldots + x_{11} = 12 \end{matrix}$ bo'lsa, x_{11} nechaga teng?

A) $-\frac{43}{11}$ B) $-\frac{54}{11}$ C) $-\frac{78}{11}$ D) $-\frac{73}{10}$

4. $\frac{tg(a+\beta)-tga-tg\beta}{tg\beta\cdot tg(a+\beta)}$ ifodaning son qiymatini toping, bu yerda $a = \frac{2\pi}{3}$, $\beta = \frac{3\pi}{5}$.
A) *1* B) *−1* C) $-\sqrt{3}$ D) $\sqrt{3}$

5. Qandaydir a, b uchun $\cos 4x = a\cos^4 x + b\cos^2 x + 1$ ayniyat bajarilsa, b ni toping.
A) *−8* B) *4* C) *−4* D) *8*

6. Har qanday (x_1, x_2) oraliq uchun y = f(x) funksiya hosilasi manfiy bo'lsin. (x_1, x_2) oraliqqa tegishli ixtiyoriy a va b (a < b) uchun qanday tengsizlik o'rinli?
A) $f(b) \geq f(a)$ B) $f(b) > f(a)$ C) $f(b) < f(a)$ D) $f(a) < f(b)$

7. 3−4+5−6+…..+2017−2018+2019 ni hisoblang.
A) *−1011* B) *1010* C) *1011* D) *−1008*

8. $f(x) = a^2\frac{(x-b)(x-c)}{(a-b)(a-c)} + b^2\frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = 2 da hosilasini toping. (Bu yerda $(a-b)(a-c)(b-c) \neq 0$)
A) *2* B) *4* C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} x + y = 7 \\ \lg x + \lg y = 1 \end{cases}$ tenglamalar sistemasining yechimlaridan iborat barcha x va y larning yig'indisini toping.
A) *20* B) *14* C) *7* D) *12*

10. [2x−1]=x tenglama yechimlari ko'paytmasini (agar yechimlari bitta bo'lsa o'zini) toping. Bu yerda [a] - a sonning butun qismi.
A) *3* B) *0* C) *2* D) *1*

11. $64-x^{5-\log_2 x}=0$ tenglamaning ildizlari ko'paytmasini toping.
A) *8* B) *64* C) *32* D) *16*

12. Agar |x−3| < 4 bo'lsa, |x+1|+|x−4|+|x−6| = 10 tenglamaning ildizlari yig'indisini toping.
A) $7\frac{1}{3}$ B) *1* C) $6\frac{1}{3}$ D) *0*

13. $\sqrt{6-x} < x$ tengsizlikning butun yechimlari o'rta arifmetigini toping.
A) *2,5* B) *4,5* C) *3,5* D) *1*

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2\cdot(3x+2)^3\cdot(x-1)^{202}+(x-1)^{2000}+17$
A) *17* B) *26* C) *33* D) *−9*

15. [1,10] kesmada berilgan f(x) funksiyaning eng katta va eng kichik qiymatlari teng bo'lsin. U holda f(9)−f(5) ifodaning eng katta qiymatini toping.
A) *f(4)* B) *9* C) *4* D) *0*

16. Agar $f(x) = ax^3-5x^2+b$ va f '(2) = 16 bo'lsa, a ni toping.
A) *1* B) *3* C) $\frac{1}{3}$ D) $\frac{2}{3}$

17. Agar $f(x) = x^3+2ax^2+3bx+8$ va f "(3) = 22 bo'lsa, a ni toping.
A) *1* B) *2* C) *4* D) *3*

18. $\int_{-1}^{1}(2x^5 - x^3 + 2x)dx$ aniq integralni hisoblang.
A) $\frac{7}{3}$ B) *0* C) $\frac{3}{4}$ D) $\frac{5}{24}$

19. $\int\frac{dx}{\sqrt{4-x^2}}$ ni hisoblang.
A) $\frac{1}{2}\arcsin\frac{x}{2} + C$ B) 0,5arcsinx + C C) $\arcsin\frac{x}{2} + C$ D) *arcsinx + C*

20. ABCD trapetsiyaning AD va BC asoslari mos ravishda 8 va 4 ga teng. Agar ACD uchburchakning yuzi 12 ga teng bo'lsa, berilgan trapetsiya yuzini toping.
A) *9* B) *18* C) *12* D) *24*

21. Radiusi 3 ga teng bolgan sharga yasovchisi 4 ga teng bo'lgan konus ichki chizilgan. Konus yasovchisining asos tekisligi bilan tashkil etgan burchak sinusini toping.
A) $\frac{4}{9}$ B) $\frac{4}{5}$ C) $\frac{1}{3}$ D) $\frac{2}{3}$

22. Quyidagi keltirilgan jumlalardan noto'g'risini toping.
A) *Agar ikki uchburchakning bir tomoni va ikkita burchagi mos ravishda teng bo'lsa, bu uchburchaklar teng bo'ladi.*
B) *Teng tomonli uchburchak teng yonli uchburchak ham bo'ladi.*
C) *Uchburchakning bir uchi va shu uchining qarshisidagi tomon o'rtasini tutashtiruvchi kesma uning medianasi deyiladi.*
D) *Kesma o'rta perpendikulyarining ixtiyoriy nuqtasi kesma uchlaridan teng uzoqlikda joylashgan.*

23. Kubning dioganalidan ushbu dioganal bilan kesishmaydigan qirrasigacha bo'lgan masofa 4 ga teng. Kubning hajmini toping.
A) $144\sqrt{2}$ B) $240\sqrt{2}$ C) $180\sqrt{2}$ D) $128\sqrt{2}$

24. $a\,(2;3;4)$ va $b\,(1;3;4)$ vektorlar berilgan $c = 2a + b$ vektorning uzunligini toping.
A) $\sqrt{280}$ B) $\sqrt{250}$ C) $\sqrt{310}$ D) $\sqrt{220}$

25. ABCD parallelogramm berilgan. M nuqta BD dioganalda yotadi, bunda MD : BM = 2 : 1. Agar ADCM to'rtburchak yuzi 8 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *24* B) *16* C) *12* D) *8*

26. Koordinatalari A(2;0), B(8;0) va C(4;3) nuqtalarda bo'lgan uchburchakning Ox o'qi atrofida aylantirilishidan hosil bo'lgan jismning hajmini toping.
A) 18π B) 16π C) 15π D) 12π

27. $\{ x/x\in N, 0 \le x < 5 \}$ to'plamning nechta qism to'plamlari mavjud?
A) *16* B) *4* C) *32* D) *5*

28. $k \in N$ da $B_k=x^k+y^k$ darajali yig'indi, $o_1=x+y$, $o_2=xy$ bo'lsa, u holda quyidagi qaysi munosabat doim o'rinli?
A) $B_3=B_1o_1-B_2o_2$ B) $B_3=B_2o_1-B_1o_2$ C) $B_3=B_2o_2+B_1o_1$ D) $B_3=B_2o_1+B_1o_2$

29. y=f(x) funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida y=f(x−m)−n funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) $N(-m;-n)$ B) $N(m;n)$ C) $N(-m;n)$ D) $N(m;-n)$

30. Qavariq ABCDEF oltiburchakda ichki burchaklar o'zaro teng. Agar AB = 5, BC = 4, CD = 3, EF = 1 bo'lsa, DE tomon uzunligini toping.
A) *6* B) *7* C) *8* D) *bir qiymatni aniqlab bo'lmaydi*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. Ali sakkizlik sanoq sistemasida (73;100) oraliqdagi barcha butun sonlarni yozib chiqdi. Vali esa shu sonlardan avval 5 raqami , so'ng 6 raqami qatnashgan barcha sonlarni o'chirib tashladi. Qolgan sonlar yig'indisini sakkizlik sanoq sistemasida aniqlang va o'nbeshlik sanoq sistemasiga o'tkazing.
A) *7B* B) *83* C) *67* D) *58*

33. A = "BIOS – ma'lumotlarni kiritish va chiqarish dasturidir."
B = "Shareware – sinovdan o'tkazish muddatiga ega bo'lgan dasturlardir."
C = "Doppix dasturi operatsion sistemadir."
Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping:
not (A or (not B and C))
A) *Yolg'on* B) *Ba'zi mulohazalarning qiymatini aniqlab bo'lmaydi*
C) *Rost* D) *Ifodada xatolik bor*

34. MS Excel. A1=4; B1=2; A2=3; B2=10 bo'lsa, =?(??(A1;A2)+??(B1;B2):B1) formulaning natijasi 8 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.
A) *Сумм, Макс* B) *Срзнач, Макс*
C) *Сумм, Мин* D) *Левсимв, Степень*

35. Faylga yo'l berilgan: C: \Mypictures\klass\picture.bmp Bosh katalogni ko'rsating.
A) *my pictures* B) *picture* C) *C:* D) *klass*

36. Paskal. Dastur natijasini aniqlang.
```
Var a, b, c: integer; k:boolean;
Begin Randomize; a:=1+random(1);
b:=1+trunc(random); k:=true;
While k Do begin c:=a+b; a:=c mod a+1;
b:=c div b; if a=b then k:=false; end;
Write(a+b+c,k); readln; End.
```
A) *5FALSE* B) *8TRUE* C) *Natijani aniqlab bo'lmaydi* D) *8FALSE*

4600030

1. O'sish tartibida yozing: $a = \frac{7}{15}$, $b = \frac{9}{20}$ va $c = \frac{8}{17}$
A) $b < a < c$ B) $b < c < a$ C) $a < b < c$ D) $a < c < b$

2. Bir guruh bolalarning o'rtacha og'irligi 40 kg ga teng. Qiz bolalarning o'rtacha og'irligi 35 kg, o'g'il bolalarning o'rtacha og'irligi esa 50 kg ligi ma'lum. Agar guruh a'zolarining 20 nafari qiz bolalar bo'lsa, o'g'il bolalar sonini toping.
A) *20* B) *8* C) *10* D) *6*

3. Arifmetik progressiyada 10−hadi 7 ga, 7−hadi esa 10 ga teng. Progressiyaning 12−hadini toping.
A) *13* B) *6* C) *14* D) *5*

4. Agar $tg\alpha=-4$ bo'lsa, $\frac{2\cos 2a-1}{2-9\cos^2 a}$ ning qiymatini toping.
A) *−0,5* B) *−9,5* C) *−3,16* D) *−1,88*

5. Qandaydir a, b uchun $\cos 4x=a\cos^4 x+b\cos^2 x+1$ ayniyat bajarilsa, a+b ni toping.
A) *−4* B) *3* C) *−3* D) *0*

6. Agar $\log_3 25 = a$, $\log_{25} 8 = b$ bo'lsa, $\log_2 3$ ni a va b orqali ifodalang.
A) $\frac{ab}{3}$ B) $\frac{1}{3ab}$ C) $\frac{3}{ab}$ D) $\frac{3ab}{2}$

7. 3−4+5−6+…..+2017−2018+2019 ni hisoblang.
A) *−1011* B) *1010* C) *1011* D) *−1008*

8. $f(x) = a^2\frac{(x-b)(x-c)}{(a-b)(a-c)} + b^2\frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2\frac{(x-a)(x-b)}{(c-a)(c-b)}$ funksiyaning x = −1 da hosilasini toping. (Bu yerda $(a-b)(a-c)(b-c) \neq 0$)
A) *−2* B) *−1* C) *0* D) *a, b, c ga bog'liq*

9. $\begin{cases} y-x=3 \\ y-z=4 \\ x^2+y^2+z^2=30 \end{cases}$ tenglamalar sistemasini yeching.
A) *(3;1;4), (−2/3; −5/3; −1/3)* B) *(−3,3; −0,3; −4,3), (2;5;1)*
C) *(−10/3; −1/3; −13/3), (2;5;1)* D) *(1;4;0), (2;5;1)*

10. $x^2-(k+1)x+k^2+k-32 = 0$ tenglama ildizlaridan biri 2 dan katta, ikkinchisi esa 2 dan kichik bo'lsa, k ning butun qiymatlari yig'indisini toping.
A) *5* B) *4* C) *6* D) *0*

11. $64-x^{5-\log_2 x}=0$ tenglamaning ildizlari ko'paytmasini toping.
A) *8* B) *64* C) *32* D) *16*

12. Agar $|x+7| = \frac{x}{2}+a$ tenglama bitta yechimga ega bo'lsa, a parametr nechta natural qiymatga ega?
A) *1* B) *3* C) *2* D) *0*

13. $\sqrt{3-x} > x-1$ tengsizlikni yeching.
A) *(−∞;2)* B) *(0;3]* C) *(2;3]* D) *(1;3]*

14. Ko'phadning ozod hadini toping.
$f(x)=(2x+1)^2\cdot(3x+2)^3\cdot(x-1)^{202}+(x-1)^{2000}+17$
A) *17* B) *26* C) *33* D) *−9*

15. $f(x)= 3\cos x - 4\sin x + 3$ funksiyaning qiymatlar sohasini toping.
A) *[−4;6]* B) *[−3;7]* C) *[−5;5]* D) *[−2;8]*

16. Agar $f(x)=7x^2+4x+5$ bo'lsa, f(cosx) ni toping.
A) $7\cos^2 x - 4\cos x + 5$ B) $12+4\cos x - 7\sin^2 x$
C) $2+4\cos x - 7\sin^2 x$ D) $7\cos^2 x + 4\cos x - 5$

17. Agar $f(x) = x^3 - 5x^2 + x + a$ va $f''(2) = f(2)$ bo'lsa, a ni toping.
A) *6* B) *5* C) *10* D) *12*

18. $\int_{-\frac{\pi}{3}}^{\frac{\pi}{3}}(\sin 2x - \sin x)dx$ aniq integralni hisoblang.
A) $\frac{\sqrt{3}}{3}$ B) *0* C) $\frac{3}{4}$ D) $\frac{\sqrt{3}}{3}-\frac{1}{2}$

19. $\int e^{\sin x}\cdot\cos x\,dx$ integralni hisoblang.
A) $\frac{e^{\sin x}}{\cos x}+C$ B) $e^{\sin x}+C$ C) $\cos x + e^{2\sin x}+C$ D) $-\frac{1}{2}e^{\sin x}+C$

20. ABCD trapetsiyada CF balandlik o'tkazilgan. Uning kichik asosi BC = 2 va AB = CD = AF = 5 bo'lsa, trapetsiyaning yuzini toping.
A) *25* B) *40* C) *10* D) *20*

21. ABC to'g'ri burchakli uchburchakning B to'g'ri burchagi uchidan BD balandlik tushirilgan. Hosil bo'lgan ABD uchburchakka radiusi 7 ga teng, BCD uchburchakka esa radiusi 24 ga teng bo'lgan aylanalar ichki chizilgan. BD balandlikni toping.
A) *54* B) *52* C) *56* D) *58*

22. Kvadratning tomonlari koordinata o'qlariga parallel va 4 ga teng. Uning markazi (2;1) nuqtada joylashgan. Kvadrat tomonlarining ordinata o'qi bilan kesishish nuqtalari koordinatalarini toping.
A) *(0;−1), (0;3)* B) *(0;1), (0;3)* C) *(0;−3), (0;1)* D) *(0;−2), (0;2)*

23. M nuqta $ABCA_1B_1C_1$ muntazam prizma ABC asosidagi BC tomonning o'rtasi bo'lsin. Prizmaning yon qirrasi $\sqrt{44}$ ga, asosining tomonlari 16 ga teng bo'lsa, B_1M to'g'ri chiziq va ABB_1A_1 yon yoqi orasidagi burchakning sinusini toping.
A) $\frac{1}{2}$ B) $\frac{3}{5}$ C) $\frac{2}{3}$ D) $\frac{4}{5}$

24. $a(-2;3)$ va $b(2;n)$ vektorlar berilgan. n ning qanday qiymatida bu vektorlar o'zaro perpendikulyar boladi
A) $\frac{3}{4}$ B) $\frac{4}{3}$ C) $-\frac{3}{4}$ D) $-\frac{4}{3}$

25. ABCD parallelogramm berilgan. M nuqta BD diagonalda yotadi, bunda MD:BM=2:1. Agar ADCM to'rtburchak yuzi 6 ga teng bo'lsa, ABCD parallelogramm yuzini toping.
A) *6* B) *9* C) *25* D) *12*

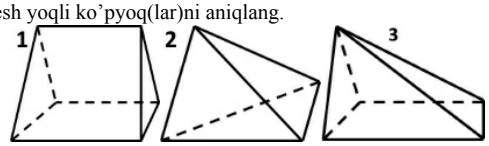
26. Uchlari A(−4;0), B(5;3) va C(0;−2) nuqtalarda bo'lgan ABC uchburchakning AB tomonining Oy o'qi bilan kesishish nuqtasi koordinatasini toping.
A) $(0;\frac{4}{3})$ B) $(0;\frac{13}{7})$ C) $(0;\frac{3}{2})$ D) $(0;\frac{5}{3})$

27. Talaba 4 ta imtihonni 6 kun davomida topshirishi kerak. Buni necha xil usulda amalga oshirishi mumkin? Bunda talabaga 1 kunda ko'pi bilan bitta imtihon qo'yilishi mumkin.
A) *360* B) *24* C) *120* D) *30*

28. Agar $\frac{3^x+6^x+9^x}{5^x+10^x+15^x}=\frac{50}{18}$ bo'lsa, x ni toping.
A) *−4* B) *−2* C) *−3* D) *−5*

29. $y = \sin^2 x$ funksiya grafigi berilgan bo'lib, uni parallel ko'chirish yordamida $y = \sin^2(x - m)+n$ funksiya grafigi hosil qilingan. Bunday parallel ko'chirishda koordinata boshi qanday nuqtaga ko'chadi?
A) *N(m;n)* B) *N(−m;n)* C) *N(m;−n)* D) *N(−m;−n)*

30. Besh yoqli ko'pyoq(lar)ni aniqlang.



A) *1, 3* B) *1* C) *3* D) *2*

31. Faqat rost mulohazalarni aniqlang va ularga tenglashtirilgan sonlar yig'indisini rim sanoq sistemasida hisoblang.
CLXXXVII = "Informatikani, odatda, Hardware va Software kabi ikki qismning birligi sifatidaqaraladi"
VCIII = "Software – bu informatikaning qismi bo'lib, dasturiy vositalar sifatida qaraladi"
IV = "Informatikani, odatda, Hardware va Programware kabi ikki qismning birligi sifatida qaraladi"
A) *CXIX* B) *CXX* C) *CXVII* D) *CCLXXXV*

32. 240, 301, 220, 332 butun sonlarni barchasini yozish mumkin bo'lgan eng kichik asosli sanoq sistemasida shu sonlar yig'indisini aniqlang.
A) *2143* B) *1535* C) *3013* D) *1423*

33. Raqamli signalni analogli signalga va aksinchaga aylantirib beruvchi qurilma nomini toping.
A) *deshifrator* B) *telefaks* C) *modem* D) *shifrator*

34. A1=-7, B1=8, B2=4 bo'lsin. Quyidagi formula natijasi -23 ga teng bo'lishi uchun A2 katakka kiritilishi kerak bo'lgan qiymatni aniqlang.
=ЕСЛИ(ИЛИ(A1+B2<=A2*B1; A1*B1>0); A1*B2+B1-A2; A1*B1+B2+A2)
A) *1* B) *0* C) *3* D) *5*

35. Quyidagi html-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda birinchi katakda qanday shriftdagi ro'yhat qo'llanilgan?

```
<table> <tr> <td> <cite> <ol> <u> <li> test </u>
</ol> </cite> </td> <td colspan=3> <b> <ol> <i>
<li> test </i> </ol> </b> </td> </tr> <tr> <td colspan=2>
<ul> <em> <li> test </em> </ul> </td>
<td> <ul> <u> <li> test </u> </ul> </td> <td>
<strong> <ul> <li> test </ul> </strong> </td> </tr> </table>
```

A) *Og'ma shriftli markerlangan ro'yhat*
B) *Tagchiziqli shriftli markerlangan ro'yhat*
C) *Qalin va og'ma shriftli tartiblangan ro'yhat*
D) *Tagchiziqli va og'ma shriftli tartiblangan ro'yhat*

36. Paskal. Dastur natijasini aniqlang.

```
Var N, k: integer; S: String;
Begin  Randomize; S: = 'DTM – 2017'; n: = Random(1)+2;
S: = s[n]+s[1];
Insert('01.08',s,2); K:Random(1)+5;
Write(S[k]); readln; End.
```

A) *Natijani aniqlab bo'lmaydi* B) *1* C) *0* D) *8*

	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3

										0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
1	B	B	D	A	C	B	D	C	D	B	B	C	B	C	C	A	B	C	A	B	C	B	C	B	A	D	B	B	A	A
2	B	B	C	C	C	B	A	C	A	B	D	B	D	B	A	D	C	D	A	B	C	D	B	B	A	D	A	A	C	C
3	D	B	D	A	D	D	B	B	A	A	D	B	A	B	C	D	D	D	B	D	D	B	A	B	A	B	B	D	A	D
4	D	C	D	D	C	A	A	D	C	A	A	C	C	A	C	A	D	D	A	D	B	A	A	A	D	D	C	C	C	D
5	A	C	D	C	D	C	C	D	D	A	D	C	D	D	B	A	C	D	D	C	C	C	C	C	D	D	A	A	A	D
6	D	D	D	C	D	A	C	C	C	C	C	A	D	C	C	C	D	C	D	A	D	D	A	D	C	A	C	C	C	C
7	C	C	A	B	C	D	C	D	C	C	A	A	C	A	D	C	D	D	B	C	C	D	C	A	C	C	C	C	C	C
8	A	B	B	C	A	C	C	B	B	A	B	B	B	C	B	A	C	B	B	B	B	B	C	B	C	B	B	B	B	A
9	B	B	D	A	A	A	B	C	A	A	C	B	C	A	D	C	D	A	A	C	C	C	A	A	A	D	A	A	B	C
10	B	D	A	A	D	B	D	D	D	C	D	D	C	A	D	D	D	A	D	B	B	C	C	D	D	B	A	B	D	A
11	C	A	B	C	C	B	A	B	B	C	A	B	C	C	A	A	B	C	C	A	B	A	C	B	C	C	C	A	C	C
12	D	D	C	A	B	A	D	C	D	A	D	C	C	A	D	D	C	D	C	C	A	B	D	A	D	C	D	C	A	D
13	A	C	B	C	C	A	B	B	A	C	C	B	B	B	B	A	B	D	B	C	A	A	B	B	B	A	C	B	B	A
14	C	A	C	A	C	C	C	A	C	A	A	B	C	A	B	B	A	C	B	B	A	A	C	B	B	A	A	B	B	B
15	A	A	D	A	C	A	B	C	A	A	A	B	D	B	B	B	A	A	B	A	B	C	B	B	C	C	D	D	D	D
16	B	C	D	C	C	B	C	D	D	B	B	B	C	A	D	A	C	B	C	A	B	C	D	B	C	A	A	C	B	B
17	D	D	A	D	D	D	D	D	D	D	A	D	D	A	D	D	D	D	A	A	A	D	D	D	D	D	A	A	A	D
18	A	C	D	B	D	B	B	B	D	D	B	D	B	C	B	D	B	B	C	B	A	B	B	B	B	B	B	B	B	B
19	C	B	D	B	B	C	B	D	B	B	B	B	B	C	B	B	B	D	B	C	C	B	C	B	B	B	B	D	C	B
20	B	C	A	A	D	B	B	B	A	D	B	B	B	A	A	A	A	A	A	B	A	A	A	B	A	B	A	B	B	D
21	D	B	D	C	D	D	B	D	C	C	B	D	D	A	B	D	B	C	D	C	D	D	B	D	D	D	D	A	D	C
22	A	A	C	B	D	C	A	A	A	A	A	B	D	A	A	A	B	D	A	A	B	A	C	C	A	B	C	B	A	A
23	A	A	D	D	D	D	D	A	D	A	B	A	D	B	B	D	D	D	A	A	D	D	D	D	D	A	D	D	D	D
24	A	D	A	B	A	B	C	C	A	B	B	C	B	B	B	A	A	C	A	A	C	B	C	A	A	C	B	A	B	B
25	A	B	C	D	C	B	B	D	B	A	C	B	D	C	B	C	B	A	B	C	D	C	D	D	D	C	D	C	C	B
26	A	A	A	A	D	A	A	A	A	A	D	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
27	A	A	B	A	D	C	A	A	A	D	C	A	D	A	C	D	D	A	D	A	A	A	C	B	A	A	D	A	A	A
28	A	B	C	B	A	B	B	B	D	C	B	B	B	C	B	B	C	B	A	C	A	A	C	A	B	B	B	B	B	B
29	A	B	C	B	C	B	B	A	B	A	A	A	B	A	A	C	A	C	C	A	A	D	D	D	D	A	B	B	D	A
30	C	A	C	C	C	C	C	C	C	A	C	A	A	C	C	C	C	C	C	C	C	C	C	C	C	A	A	C	C	A
31	B	D	A	D	A	A	A	B	A	A	D	D	D	D	A	A	D	D	D	A	D	A	D	A	D	A	D	A	D	D
32	B	A	B	B	A	D	B	A	B	A	D	B	B	C	B	D	B	B	B	B	B	B	B	B	B	B	D	C	D	B	A
33	C	B	D	C	D	D	D	C	D	D	C	B	A	B	B	D	D	D	C	A	B	B	C	C	A	C	B	D	A	C
34	D	B	B	B	C	B	B	D	B	D	B	B	B	C	C	D	D	B	B	D	D	B	D	B	B	B	D	B	B	C
35	C	C	C	D	C	C	C	D	C	D	D	C	C	D	D	D	D	C	C	D	D	C	C	D	D	D	D	C	C	D
36	D	C	D	C	C	B	D	B	A	C	C	C	B	C	B	B	A	C	C	D	A	A	B	D	D	D	C	A	A	C