

HARBIYLAR IMTIHONIGA TUSHGAN SAVOLLAR.

1. Ifodani soddalashtiring: $5a - (4a - (3a - (2a - b)))$.
2. Agar qo`shni burchaklar nisbati 13: 17 kabi bo`lsa, Shu burchaklarni toping.
3. Agar $\sin \alpha \cdot \cos \alpha = -0,25$ va $1.6 < \alpha < 3.1$ bo`lsa, $\cos \alpha - \sin \alpha$ ni toping.
4. 0, 1, 2, 3, 4, 5, 6 raqamlardan jami nechta uch xonali son hosil qilsa bo`ladi?
5. $A = \{a, b, c, d, e, f\}$ to`plamda nechta d elementini qatnashgan qism to`plami mavjud?
6. O`n bir burchakli prizmada nechta turli diagonal kesim mavjud?
7. 1 dan 126 gacha bo`lgan natural sonlar orasida nechta 2 ga ham 7 ga ham bo`linadigan son mavjud?
8. $\int x^3 \sin x^4 dx$ aniqmas integralni hisoblang?
9. Agar $a \cdot b = 9$ va $a + b = 7$ bo`lsa, $(4 - a^2) \cdot b + (4 - b^2) \cdot a$ ni hisoblang?
10. 433^{433} sonini 5 ga bo`lgandagi qoldiqni toping?
11. a, b natural sonlar va $a^2 - b^2 = 49$ shart o`rinli bo`lsa, $3a - 2b$ ning qiymatini toping.
12. Agar $16 - 3(2x - 3(2 - 3(1 - 3x))) = 82$ tenglamaning ildizi x_0 bo`lsa, $x_0^2 - 6$ ning qiymatini toping.
13. Agar n va m natural sonlar bo`lsa, $(n - m)(n + m) = 25$ tenglik o`rinli bo`lsa, $n + 2m$ ni qiymatini toping.
14. Xaritani masshtabi 1:4000000 bo`lsa, xaritada 1,2dm bo`lgan kesmaning asil uzunligi qanchaga teng.

15. ΔABC da $|BC| = a$, $|AC| = b$, $|AB| = c$, $3\angle A + \angle B = 180^\circ$, $3a = 2c$ bo'lsa, b tomon uzunligini a orqali ifodalang.

- A) $\frac{5a}{4}$ B) $\frac{3a}{4}$ C) $a\sqrt{2}$ D) $a\sqrt{3}$

16. Arifmetik progressiyada dastlabki 20 ta hadi yig'indisi 400 ga, dastlabki 30 ta hadi yig'indisi esa 900 ga teng. S_{50} ni toping?

17. Aniq integralni hisoblang: $\int_0^2 x e^{x^2} dx = ?$

18. $\cos x = -\sqrt{0,2}$ bo'lsa, $\sin\left(\frac{3\pi}{2} - 2x\right)$ ni hisoblang.

19. Trapetsiyaning bir diagonali 13, ikkinchi diagonali $\sqrt{125}$ ga, balandligi 5 ga teng bo'lsa, yuzini toping.

20. Ko'pyoqning yoqlari soni 7 ta, uchlari soni 6 ta bo'lsa, qirralar sonini toping.

21. $\frac{1}{a(a-b)(a-c)} + \frac{1}{b(b-a)(b-c)} + \frac{1}{c(c-a)(c-b)}$ ifodani soddalashtiring

22. 324; 255 va 71 sonlarining har birini qanday natural songa bo'lganda qoldiqlari bir xil qoladi?

23. $\int (x^3 - \cos 4x) dx$ ni aniqlang.

24. $\frac{\sin(2x+y) + \sin(2x-y)}{\sin(2x-y)\sin(2x+y)} \cdot \frac{\operatorname{tg} y - \operatorname{tg} x}{\operatorname{tg} y}$ ni qiymatini toping.

25. 12345...110111112 shu sonni hosil qilishda nechta raqam ishtirok qilgan?