

1. $x^4 + (b-4)x^2 - 4b = 0$ tenglamaning haqiqiy ildizlari ko'paytmasini toping. ($b \geq 0$)
A) -4 B) -2 C) $b-2$ D) b
2. Pol sirtining 72% ini bo'yash uchun 4,5 kg bo'yoq ketdi. Polning qolgan qismini bo'yash uchun qancha bo'yoq kerak bo'ladi?
A) 1,75 kg B) 2 kg
C) 1,25 kg D) 2,5 kg
3. $|6+5x+x^2| \leq 6+5x+x^2$ tengsizlikni yeching.
A) $\{-3; -2\}$ B) $(-\infty; -3] \cup [-2; \infty)$
C) $(-3; -2)$ D) $[-3; -2]$
4. Arifmetik progressiyada $a_1 + a_2 + a_3 = 0$ va $a_1^2 + a_2^2 + a_3^2 = 98$ bo'lsa, shu o'suvchi arifmetik progressiyada a_4 ni toping?
A) 14 B) 49 C) -49 D) -14
5. $\frac{a^2 - 4a - 5}{a^2 - 1}$ ni hisoblang.
A) $\frac{a+5}{a-1}$ B) $\frac{a-5}{a+1}$ C) $\frac{5-a}{1-a}$ D) $\frac{5-a}{a-1}$
6. $|m+1| = m+1$ m ning qanday qiymatlarida tenglik o'rinli bo'ladi.
A) $m = -1$ B) $m > -1$ C) $m \geq -1$ D) $m \in \mathbb{R}$
7. Hisoblang: $1 + \frac{1}{1 - \frac{1}{1 + \frac{1}{1 - \frac{1}{5}}}}$
A) $\frac{14}{5}$ B) $\frac{11}{7}$ C) $\frac{5}{9}$ D) $\frac{14}{9}$
8. Agar $x^2 - 3x - 6$ tenglamaning ildizlari x_1 va x_2 bo'lsa, $\frac{1}{x_1^3} + \frac{1}{x_2^3}$ ni toping.
A) $-0,5$ B) $\frac{1}{3}$ C) $0,5$ D) $-0,375$
9. $a^2 - 11a + 22 + (5-a)x + x^2 = 0$ tenglamaning bitta ildizi 2 dan kichik,

ikkinchi ildizi 2 dan katta bo'ladigan a ning barcha qiymatini toping.

- A) $(-\infty; 9]$ B) $[4; \infty)$
C) $(4; 9)$ D) $(-\infty; 4) \cup (9; \infty)$
10. Soddashtiring:
 $(a^2 + b^2)^3 - (a^3 + b^3)^2 - (a^2b - ab^2)^2$
A) $2a^4b^2 + 2a^2b^4$ B) 0
C) $4a^2b^2$ D) $2a^4b^2 - 2a^2b^4$
11. $\frac{1}{2} \cdot \frac{1}{3} + \frac{1}{4} \cdot \frac{1}{9} + \frac{1}{8} \cdot \frac{1}{27} + \dots$ yig'indini hisoblang.
A) $0,25$ B) $0,2$ C) 1 D) $1,2$
12. Agar $(x-4)^2 + (x-y^2)^2 = 0$ bo'lsa, $x+2y$ nechaga teng.
A) 0 yoki 8 B) 4 C) 6 D) 8
13. $\left(1 + \frac{2}{3}\right) \cdot \left(1 + \frac{2}{4}\right) \cdot \left(1 + \frac{2}{5}\right) \cdot \dots \cdot \left(1 + \frac{2}{98}\right)$ ni hisoblang.
A) 825 B) 625 C) 1 D) 980
14. G'ildirak $6\frac{2}{9}$ minutda $11\frac{1}{5}$ marta aylanadi, u $\frac{2}{120}$ soatda necha marta aylanadi?
A) 1 B) $1\frac{3}{5}$ C) $1\frac{2}{5}$ D) $1\frac{4}{5}$
15. $x+21 < -\frac{144}{x-3}$ tengsizlikni yeching.
A) $(-9; 3) \cup (3; \infty)$ B) $(3; \infty)$
C) $(-\infty; -9) \cup (-9; 3)$ D) $(-\infty; 3)$
16. x, y, z sonlar uchun $\frac{z}{6} = \frac{y}{5} = \frac{x}{2}$ tenglik o'rinli bo'lsa, $\frac{x^2 + y^2 + z^2}{xy + yz + xz}$ ni hisoblang.
A) $\frac{32}{25}$ B) $\frac{28}{13}$ C) $\frac{65}{52}$ D) $\frac{48}{43}$
17. Geometrik progressiyada $b_4 = \frac{3^7}{2^5}$ va $b_8 = \frac{3^{11}}{2^{13}}$ bo'lsa, b_2 ni toping.

- A) $3^3 \cdot 2$ B) $\frac{3}{2}$ C) $\frac{3}{4}$ D) $\frac{3^5}{2}$
18. Soddalashtiring. $\frac{7 \cdot 2^{n+1} - 3 \cdot 2^{n-1}}{2^n + 4 \cdot 2^{n-1}}$
- A) $5\frac{2}{5}$ B) $4\frac{2}{17}$ C) $3\frac{5}{17}$ D) $4\frac{7}{19}$
19. $(x-2)\sqrt{3+2x-x^2} \geq 0$ tengsizlikni yeching
- A) $[2; 3] \cup \{-1\}$ B) $[3; \infty)$
C) $[-1; 3]$ D) $[2; \infty)$
20. $x^2 + x - 2 = \frac{x^2 + x - 2}{x^2 - 1}$ tenglamaning ildiz-lari ko'paytmasini toping.
- A) 6 B) 4 C) -4 D) -2
21. $\frac{x^{-3} + 8}{x^{-2} - 2x^{-1} + 4}$ ning $x = 0,25$ dagi qiymatini hisoblang.
- A) 6 B) 4 C) 3 D) 5
22. Hadlari musbat sonlardan iborat geometrik progressiyaning 5-hadi $10x - 2$ ga, birinchi hadi x ga va uchunchi hadi $2x + 2$ ga teng. Shu progressiyaning maxrajini toping?
- A) 3 B) $\sqrt{3}$ C) 2 D) $\sqrt{2}$
23. Soddalashtiring:
- $$\frac{(a-b)^2 + ab}{(a+b)^2 - ab} \cdot \frac{a^5 + b^5 + a^2b^3 + a^3b^2}{(a^3 + b^3 + ab^2 + a^2b)} \cdot (a^3 - b^3)$$
- A) $\frac{1}{a-b}$ B) $a+b$ C) $a-b$ D) ab
24. Ushbu $43^{43} - 17^{17}$ ayirmani 10 bo'lganda xosil bo'ladigan qoldiqni toping.
- A) 5 B) 2 C) 1 D) 0
25. $\begin{cases} bx \geq 5b - 3 \\ bx \leq 4b \end{cases}$ tengsizliklar sistemasi b ning qanday qiymatida yechimga ega bo'lmaydi.
- A) $[6; \infty)$ B) $(-\infty; 0) \cup (6; \infty)$
C) $(-\infty; 0)$ D) $(3; \infty)$