

III. Периодические дроби.

Вычислить:

1. $0.(21) + 0.(372)$;
2. $1.(73) - 0.(487)$;
3. $0.8(5) + 0.1(6)$;
4. $0.8(5) - 0.1(6)$;
5. $0.(4) + 2.(5) + 0.32(36)$;
6. $2.(7) + 1.(2) + 0.36(63)$;
7. $0.125(81) + 0.25(72)$;
8. $0.375(54) + 0.75(63)$;
9. $0.40(36) - 1.16(180)$;
10. $0.60(270) - 1.80(27)$;
11. $\frac{0.8(5) + 0.17(1)}{0.8(5) - 0.17(1)} + \frac{0.8(3) + 0.1(6)}{0.8(3) - 0.1(6)}$;
12. $\frac{0.7(2) + 0.13(8)}{0.7(2) - 0.13(8)} + \frac{1.(45) - 0.4(54)}{1.(45) + 0.4(54)}$.

IV. Степени.

Вычислить:

1. $(2^{-2} + 2^0) \div \left(\left(\frac{1}{2} \right)^{-2} - 5 \cdot (-2)^{-2} + \left(\frac{2}{3} \right)^{-2} \right)$;
2. $1.44^{\frac{3}{2}} \div \left(-\frac{5}{6} \right)^{-2} + \left(1\frac{61}{64} \right)^{\frac{1}{3}} \cdot (-12)^2 + 2.5 \cdot \frac{2}{5}$;
3. $9^{\frac{3}{2}} - (5^0)^3 \cdot 3 + (0.01)^{\frac{1}{2}} - 9 \cdot 3^{-3} \cdot 27^{\frac{2}{3}}$;
4. $(0.001)^{\frac{1}{3}} + 27^{-\frac{2}{3}} + (6^0)^5 \cdot 2 - 3^{-4} \cdot 81^{\frac{3}{2}} \cdot 27$;
5. $64^{\frac{5}{6}} - (0.125)^{-\frac{1}{3}} - 32 \cdot 2^{-4} \cdot 16^{-\frac{1}{2}} + (3^0)^4 \cdot 4$;
6. $16^{\frac{5}{4}} - (0.01)^{-\frac{1}{2}} + 12 \cdot (7^0)^3 - 16 \cdot 2^{-5} \cdot 64^{\frac{2}{3}}$;
7. $3^{-4} \cdot 27^{\frac{2}{3}} \cdot 9 - 27^{-\frac{1}{3}} + (8^0)^3 \cdot 2 + (0.125)^{-\frac{1}{3}}$;
8. $9^{\frac{5}{2}} + 10 \cdot (4^0)^5 - (0.25)^{-\frac{3}{2}} - 9^{\frac{3}{2}} \cdot 27 \cdot 3^{-5}$;
9. $9^{\frac{3}{2}} - (5^0)^3 \cdot 3 + (0.01)^{\frac{1}{2}} - 9 \cdot 27^{\frac{2}{3}} \cdot 3^{-3}$;
10. $(0.001)^{-\frac{1}{3}} + 27^{-\frac{2}{3}} + (6^0)^5 \cdot 2 - 3^{-4} \cdot 81^{\frac{3}{2}} \cdot 27$;
11. $64^{\frac{5}{6}} - (0.125)^{-\frac{1}{3}} - 32 \cdot 16^{-\frac{1}{2}} \cdot 2^{-4} + (3^0)^4 \cdot 4$;
12. $16^{\frac{5}{4}} - (0.01)^{-\frac{1}{2}} + 12 \cdot (7^0)^3 - 16 \cdot 2^{-4} \cdot 4^{\frac{5}{2}}$;
13. $\left(64^{\frac{1}{3}} \cdot 27^{\frac{2}{3}} \cdot 243^{\frac{2}{5}} \cdot 128^{\frac{3}{4}} \right)^{\frac{1}{2}}$;
14. $\frac{225^4 \cdot (3^{-2})^{-4} \cdot 25^4}{5^{11} \cdot 15^4 \cdot 81^3} \cdot 25$;
15. $(-2)^{-2} + 8^{\frac{5}{6}} \cdot 4^{2.5} \cdot 2^{0.5}$;
16. $25^{\frac{5}{4}} \cdot 125^{\frac{2}{3}} \cdot 5^{\frac{1}{2}}$;
17. $\left(6 - 4 \cdot \left(\frac{5}{16} \right)^0 \right)^{-2} + \left(\frac{2}{3} \right)^{-1} - \frac{3}{2\sqrt{2}} \cdot \cos \frac{\pi}{4}$;
18. $(6^{2.5} \cdot 36^{-1})^3 - \left(5^{\frac{1}{4}} \cdot 25^{\frac{3}{8}} \right)^{\sin \frac{\pi}{2}}$;
19. $\left(27 \cdot \left(\frac{1}{3} \right)^{1.5} \right)^2 - \left(7^{\frac{1}{4}} \cdot 49^{\frac{3}{8}} \right)^{\cos 2\pi}$;
20. $2^{\sin \frac{\pi}{2}} \cdot 3^{\frac{5\pi}{4}} \cdot 9^{\cos \frac{\pi}{3}}$;
21. $4^{\sin \frac{\pi}{6}} \cdot 5^{\frac{3\pi}{4}} \cdot 6^{\cos \frac{3\pi}{2}}$;
22. $\frac{(\sqrt[3]{16})^{\frac{9}{2}} \cdot 32^{-0.2}}{2^4}$;
23. $\sqrt[6]{3^7 \cdot 4^5} \cdot \sqrt[6]{3^5 \cdot 4}$.