Контрольная: test7/test7.py
Генерация по данным 830558560540715

Условия

Вариант 1.

1. $(x+7)^2(x^2+14x)+360=0$

2. $(x^2+10x+7)(x^2+10x-7)-15=0$

3. $\left(\dfrac{8x-9}{-8x+1}\right)^2-54\left(\dfrac{8x-1}{8x-9}\right)^2=3$

4. $\dfrac{14x+20}{3x+1}-\dfrac{9x+3}{7x+10}=-1$

5. $(8x^2+6x-1)^2-96x^2-72x+44=0$

6. $x^{18}+6x^9-27=0$

7. $x^4+9x^2+|x^2-3x|=6x^3+6$

8. $(x-5)(x-1)(x+7)(x+3)=-240$

9. $\dfrac{168}{(x+9)(x+5)}+\dfrac{52}{(x-3)(x+17)}=1$

10. $\dfrac{48}{x^2-8x+5}=2x^2-16x-10$

11. $x^4-7x^3+16x^2-21x+9=0$

12. $9(x-5)^4+17(4x^2-22x+10)^2-2(4x-2)^4=0$

13. $(4x^2+4x-3)(4x^2+2x-3)=63x^2$

14. $\dfrac{4x^2+10x+3}{4x^2-2x+3}+\dfrac{9x}{4x^2+3x+3}=-2$

15. $x^2+\dfrac{9x^2}{(x-3)^2}=72$

16. $\dfrac{2x^2}{5-2x^2}=-18x^2-3x+45$

Вариант 2.

1. $(x-7)^2(x^2-14x)-50=0$

2. $(x^2-4x-7)(x^2-4x+3)+9=0$

3. $9\left(\dfrac{x+8}{3x-5}\right)^2-3\left(\dfrac{-3x+5}{x+8}\right)^2=-26$

4. $\dfrac{40x-8}{x-7}-\dfrac{3x-21}{10x-2}=-4$

5. $(6x^2-5x+4)^2-48x^2+40x-17=0$

6. $x^{14}+4x^7-32=0$

7. $9x^4+9x^2-5\left|3x^2-3x\right|=18x^3+6$

8. $(x+6)(x+2)(x+1)(x-3)=300$

9. $\dfrac{35}{(x+1)(x-2)}+\dfrac{33}{(x+2)(x-3)}=1$

10. $\dfrac{56}{2x^2+6x-3}=8x^2+24x+8$

11. $x^4+7x^3+14x^2+14x+4=0$

12. $(x-8)^4-13(3x^2-16x-64)^2-48(3x+8)^4=0$

13. $(4x^2+5x-2)(4x^2+10x-2)=-6x^2$

14. $\dfrac{10x^2-7x+1}{10x^2-x+1}+\dfrac{3x}{10x^2+9x+1}=\dfrac{13}{4}$

15. $x^2+\dfrac{x^2}{(x+1)^2}=80$

16. $\dfrac{4x^2}{2-x^2}=-10x^2-3x+20$

Вариант 3.

1. $(x+8)^2(x^2+16x)-272=0$

2. $(x^2+2x-4)(x^2+2x+7)-80=0$

3. $\left(\dfrac{8x+3}{x+6}\right)^2-8\left(\dfrac{-x-6}{8x+3}\right)^2=2$

4. $\dfrac{6x-36}{x+3}-\dfrac{4x+12}{x-6}=-5$

5. $(8x^2+6x+1)^2+24x^2+18x-51=0$

6. $x^{18}-x^9-6=0$

7. $4x^4+16x^2+4\,|2x^2+4x|=-16x^3+60$

8. $(x+2)(x+4)(x-8)(x-6)=189$

9. $\dfrac{35}{(x-6)(x+5)}+\dfrac{10}{(x-4)(x+3)}=1$

10. $\dfrac{54}{3x^2+x-8}=6x^2+2x+7$

11. $x^4+16x^3+70x^2+48x+9=0$

12. $(x-8)^4+6(4x^2-38x+48)^2-40(4x-6)^4=0$

13. $(x^2+2x-8)(x^2-5x-8)=-12x^2$

14. $\dfrac{6x^2+2x-6}{6x^2+8x-6}+\dfrac{2x}{6x^2-x-6}=\dfrac{27}{26}$

15. $x^2+\dfrac{4x^2}{(x-2)^2}=21$

16. $\dfrac{2x^2}{2-x^2}=6x^2-7x-12$

Вариант 4.

1. $(x+2)^2(x^2+4x)-32=0$

2. $(x^2-8x+4)(x^2-8x+2)-168=0$

3. $\left(\dfrac{-3x+8}{x+4}\right)^2-54\left(\dfrac{-x-4}{-3x+8}\right)^2=3$

4. $\dfrac{14x+14}{x+3}-\dfrac{5x+15}{7x+7}=-3$

5. $(6x^2+5x-5)^2+18x^2+15x-19=0$

6. $x^6+2x^3-8=0$

7. $x^4+16x^2-43\,|x^2+4x|=-8x^3+90$

8. $(x-9)(x-10)(x-7)(x-6)=4$

9. $\dfrac{150}{(x-3)(x+4)}+\dfrac{63}{(x+6)(x-5)}=4$

10. $\dfrac{31}{3x^2+5x-7}=12x^2+20x-1$

11. $x^4-10x^3+29x^2-40x+16=0$

12. $(4x-10)^4-7(8x^2-8x-30)^2-18(2x+3)^4=0$

13. $(x^2+3x-40)(x^2-9x-40)=45x^2$

14. $\dfrac{8x^2-8x+3}{8x^2-4x+3}+\dfrac{5x}{8x^2+6x+3}=\dfrac{1}{28}$

15. $x^2+\dfrac{4x^2}{(x+2)^2}=32$

16. $\dfrac{8x^2}{1-9x^2}=-81x^2+6x+9$

Вариант 5.

1. $(x+10)^2(x^2+20x)-749=0$

2. $(x^2+10x+3)(x^2+10x+4)-2=0$

3. $\left(\dfrac{4x+1}{2x-6}\right)^2-12\left(\dfrac{-2x+6}{4x+1}\right)^2=1$

4. $\dfrac{60x+40}{3x+10}-\dfrac{9x+30}{6x+4}=-1$

5. $(10x^2-9x+3)^2+70x^2-63x+13=0$

6. $x^{14}-11x^7+30=0$

7. $9x^4+25x^2-67\,|3x^2-5x|=30x^3+68$

8. $(x+7)(x+10)(x+9)(x+6)=180$

9. $\dfrac{57}{(x+6)(x-9)}+\dfrac{30}{(x+2)(x-5)}=1$

10. $\dfrac{4}{5x^2-10x+1}=10x^2-20x+9$

11. $x^4-13x^3+38x^2-52x+16=0$

12. $4(4x+2)^4+27(4x^2+10x+4)^2-7(x+2)^4=0$

13. $(x^2+3x-40)(x^2+7x-40)=-3x^2$

14. $\dfrac{6x^2-9x-5}{6x^2-3x-5}+\dfrac{9x}{6x^2+5x-5}=\dfrac{1}{4}$

15. $x^2+\dfrac{16x^2}{(x+4)^2}=33$

16. $\dfrac{3x^2}{2-x^2}=4x^2-8x-8$

Вариант 6.

1. $(x-7)^2(x^2-14x)+258=0$

2. $(x^2-10x+5)(x^2-10x+6)-72=0$

3. $\left(\dfrac{5x-4}{-5x+1}\right)^2-12\left(\dfrac{5x-1}{5x-4}\right)^2=1$

4. $\dfrac{8x+18}{2x-5}+\dfrac{6x-15}{4x+9}=-5$

5. $(10x^2-7x+6)^2-40x^2+28x-29=0$

6. $x^{18}-8x^9+15=0$

7. $9x^4+4x^2-38\,|3x^2+2x|=-12x^3+80$

8. $(x+2)(x-10)(x-6)(x-2)=-231$

9. $\dfrac{80}{(x-2)(x+4)}+\dfrac{65}{(x+7)(x-5)}=7$

10. $\dfrac{84}{x^2-6x+5}=4x^2-24x+4$

11. $x^4+11x^3+24x^2+33x+9=0$

12. $4(x-8)^4+31(4x^2-33x+8)^2-8(4x-1)^4=0$

13. $(4x^2+3x-4)(4x^2+10x-4)=60x^2$

14. $\dfrac{10x^2-3x-7}{10x^2-7x-7}+\dfrac{9x}{10x^2+6x-7}=\dfrac{18}{5}$

15. $x^2+\dfrac{16x^2}{(x-4)^2}=9$

16. $\dfrac{4x^2}{1-x^2}=-10x^2+3x+10$

Вариант 7.

1. $(x-9)^2(x^2-18x)+380=0$

2. $(x^2+9x+8)(x^2+9x+5)-108=0$

3. $\left(\dfrac{10x+6}{5x+1}\right)^2-36\left(\dfrac{-5x-1}{10x+6}\right)^2=-5$

4. $\dfrac{12x-54}{7x-6}+\dfrac{7x-6}{2x-9}=5$

5. $(9x^2+3x+2)^2+45x^2+15x-26=0$

6. $x^{10}+7x^5+12=0$

7. $x^4+16x^2-59\,|x^2-4x|=8x^3+60$

8. $(x+5)(x-4)(x-2)(x+3)=240$

9. $\dfrac{52}{(x+9)(x+8)}+\dfrac{76}{(x+2)(x+15)}=1$

10. $\dfrac{80}{2x^2+7x-7}=8x^2+28x+4$

11. $x^4+6x^3+16x^2+24x+16=0$

12. $(3x-9)^4-(15x^2-48x+9)^2-12(5x-1)^4=0$

13. $(4x^2+3x-2)(4x^2+6x-2)=4x^2$

14. $\dfrac{9x^2-8x+2}{9x^2+2x+2}+\dfrac{4x}{9x^2-7x+2}=\dfrac{23}{11}$

15. $x^2+\dfrac{9x^2}{(x-3)^2}=16$

16. $\dfrac{5x^2}{2-7x^2}=-42x^2+7x+12$

Вариант 8.

1. $(x+10)^2(x^2+20x)-309=0$

2. $(x^2-10x+5)(x^2-10x+6)-156=0$

3. $\left(\dfrac{8x+1}{-4x+4}\right)^2-20\left(\dfrac{4x-4}{8x+1}\right)^2=-1$

4. $\dfrac{63x-27}{7x+5}-\dfrac{70x+50}{7x-3}=9$

5. $(6x^2+7x+7)^2-78x^2-91x-61=0$

6. $x^6-6x^3-40=0$

7. $x^4+x^2+|x^2+x|=-2x^3+42$

8. $(x+4)(x-3)(x-6)(x+7)=-216$

9. $\dfrac{72}{(x-1)(x+9)}+\dfrac{18}{(x-3)(x+11)}=1$

10. $\dfrac{12}{x^2-3x-2}=4x^2-12x-10$

11. $x^4+12x^3+28x^2+48x+16=0$

12. $(3x+10)^4+6(6x^2+2x-60)^2-40(2x-6)^4=0$

13. $(x^2+2x-8)(x^2+8x-8)=40x^2$

14. $\dfrac{8x^2+6x+3}{8x^2+2x+3}+\dfrac{6x}{8x^2+4x+3}=\dfrac{37}{21}$

15. $x^2+\dfrac{36x^2}{(x-6)^2}=45$

16. $\dfrac{5x^2}{1-x^2}=-4x^2-8x+4$

Вариант 9.

1. $(x+9)^2(x^2+18x)+584=0$

2. $(x^2+9x-1)(x^2+9x+6)-30=0$

3. $9\left(\dfrac{-x+2}{3x+1}\right)^2-2\left(\dfrac{-3x-1}{-x+2}\right)^2=-17$

4. $\dfrac{48x-6}{5x-7}-\dfrac{25x-35}{8x-1}=-7$

5. $(8x^2+6x+9)^2-144x^2-108x-82=0$

6. $x^{18}-3x^9-10=0$

7. $x^4+x^2-55\,|x^2+x|=-2x^3+56$

8. $(x-1)(x-10)(x+2)(x-7)=-176$

9. $\dfrac{21}{(x+7)(x+8)}+\dfrac{20}{(x+9)(x+6)}=1$

10. $\dfrac{15}{x^2+5x-3}=2x^2+10x-7$

11. $x^4+4x^3-13x^2+16x+16=0$

12. $(x+8)^4-2(3x^2+33x+72)^2-8(3x+9)^4=0$

13. $(x^2+2x-63)(x^2-6x-63)=-16x^2$

14. $\dfrac{6x^2+4x+1}{6x^2+9x+1}+\dfrac{9x}{6x^2-6x+1}=-\dfrac{47}{44}$

15. $x^2+\dfrac{x^2}{(x+1)^2}=35$

16. $\dfrac{3x^2}{9-2x^2}=-8x^2+4x+36$

Вариант 10.

1. $(x-2)^2(x^2-4x)-21=0$

2. $(x^2+x-2)(x^2+x+9)-42=0$

3. $\left(\dfrac{4x-2}{x+10}\right)^2-48\left(\dfrac{-x-10}{4x-2}\right)^2=13$

4. $\dfrac{80x-100}{3x+3}-\dfrac{3x+3}{4x-5}=1$

5. $(6x^2+x+2)^2-84x^2-14x+12=0$

6. $x^6+9x^3+20=0$

7. $9x^4+9x^2-35\,|3x^2+3x|=-18x^3+36$

8. $(x+8)(x+9)(x+5)(x+4)=252$

9. $\dfrac{108}{(x-8)(x+4)}+\dfrac{135}{(x+1)(x-5)}=2$

10. $\dfrac{77}{x^2+2x-6}=3x^2+6x-8$

11. $x^4-20x^3+96x^2+40x+4=0$

12. $(3x+1)^4+3(12x^2-2x-2)^2-28(4x-2)^4=0$

13. $(4x^2+2x-36)(4x^2-10x-36)=85x^2$

14. $\dfrac{4x^2-6x-3}{4x^2-5x-3}+\dfrac{9x}{4x^2+7x-3}=\dfrac{31}{11}$

15. $x^2+\dfrac{x^2}{(x-1)^2}=80$

16. $\dfrac{2x^2}{7-2x^2}=20x^2-9x-70$

Вариант 11.

1. $(x-5)^2(x^2-10x)+114=0$

2. $(x^2-7x+2)(x^2-7x-7)+20=0$

3. $4\left(\dfrac{3x+1}{4x+3}\right)^2-4\left(\dfrac{-4x-3}{3x+1}\right)^2=-15$

4. $\dfrac{80x+30}{9x+5}-\dfrac{36x+20}{8x+3}=-3$

5. $(9x^2-6x-16)^2+90x^2-60x-144=0$

6. $x^6-3x^3-54=0$

7. $16x^4+16x^2-21\,|4x^2-4x|=32x^3+72$

8. $(x-3)(x-2)(x+1)(x+2)=60$

9. $\dfrac{48}{(x-2)(x+6)}+\dfrac{39}{(x-3)(x+7)}=2$

10. $\dfrac{78}{2x^2+7x+3}=8x^2+28x-2$

11. $x^4-10x^3+29x^2-20x+4=0$

12. $4(4x-6)^4+7(20x^2-54x+36)^2-2(5x-6)^4=0$

13. $(4x^2+4x-2)(4x^2-x-2)=24x^2$

14. $\dfrac{10x^2-10x+1}{10x^2+8x+1}+\dfrac{9x}{10x^2-4x+1}=\dfrac{14}{5}$

15. $x^2+\dfrac{81x^2}{(x-9)^2}=40$

16. $\dfrac{4x^2}{4-8x^2}=-48x^2-5x+24$

Вариант 12.

1. $(x+4)^2(x^2+8x)+63=0$

2. $(x^2-3x-7)(x^2-3x+4)-26=0$

3. $16\left(\dfrac{x-1}{-4x+1}\right)^2-2\left(\dfrac{4x-1}{x-1}\right)^2=-31$

4. $\dfrac{6x-48}{6x-5}-\dfrac{36x-30}{x-8}=5$

5. $(4x^2+8x+5)^2-28x^2-56x-25=0$

6. $x^{10}-14x^5+45=0$

7. $25x^4+9x^2-11\,|5x^2+3x|=-30x^3+42$

8. $(x+4)(x+6)(x-4)(x-6)=189$

9. $\dfrac{30}{(x+8)(x+4)}+\dfrac{24}{(x+10)(x+2)}=1$

10. $\dfrac{78}{x^2-2x+5}=2x^2-4x-10$

11. $x^4+11x^3+22x^2+22x+4=0$

12. $9(3x-8)^4+17(12x^2-35x+8)^2-2(4x-1)^4=0$

13. $(4x^2+x-27)(4x^2-2x-27)=10x^2$

14. $\dfrac{6x^2-7x-4}{6x^2-4x-4}+\dfrac{6x}{6x^2+3x-4}=-\dfrac{5}{4}$

15. $x^2+\dfrac{x^2}{(x-1)^2}=63$

16. $\dfrac{6x^2}{6-3x^2}=-30x^2+7x+60$

Вариант 13.

1. $(x-2)^2(x^2-4x)+4=0$

2. $(x^2-4x-8)(x^2-4x-7)-2=0$

3. $\left(\dfrac{6x+8}{3x+2}\right)^2-32\left(\dfrac{-3x-2}{6x+8}\right)^2=-4$

4. $\dfrac{16x+48}{9x+3}-\dfrac{9x+3}{2x+6}=-2$

5. $(8x^2+10x+1)^2-144x^2-180x+62=0$

6. $x^{10}-13x^5+40=0$

7. $4x^4+x^2-2\left|2x^2-x\right|=4x^3+80$

8. $(x+5)(x+7)(x+4)(x+2)=72$

9. $\dfrac{28}{(x+4)(x+6)}+\dfrac{100}{(x-2)(x+12)}=1$

10. $\dfrac{30}{4x^2+6x-8}=8x^2+12x-5$

11. $x^4-9x^3-4x^2-27x+9=0$

12. $4(5x+2)^4+11(25x^2-25x-14)^2-45(5x-7)^4=0$

13. $(4x^2+5x-27)(4x^2+6x-27)=6x^2$

14. $\dfrac{8x^2+3x+1}{8x^2+7x+1}+\dfrac{3x}{8x^2+6x+1}=\dfrac{49}{52}$

15. $x^2+\dfrac{x^2}{(x+1)^2}=48$

16. $\dfrac{6x^2}{4-9x^2}=-54x^2+5x+24$

Вариант 14.

1. $(x-10)^2(x^2-20x)+900=0$

2. $(x^2+8x+2)(x^2+8x+6)-12=0$

3. $\left(\dfrac{-10x+7}{5x-9}\right)^2-8\left(\dfrac{-5x+9}{-10x+7}\right)^2=2$

4. $\dfrac{64x-8}{3x+5}-\dfrac{15x+25}{8x-1}=-6$

5. $(10x^2+x-10)^2-30x^2-3x-40=0$

6. $x^{14}-11x^7+24=0$

7. $9x^4+x^2-3\left|3x^2+x\right|=-6x^3+4$

8. $(x+7)(x+5)(x+6)(x+8)=24$

9. $\dfrac{8}{(x-5)(x-7)}+\dfrac{10}{(x-4)(x-8)}=3$

10. $\dfrac{13}{4x^2+8x-9}=8x^2+16x+7$

11. $x^4+2x^3-4x^2+4x+4=0$

12. $(3x+10)^4-3(12x^2+55x+50)^2-54(4x+5)^4=0$

13. $(x^2+3x-8)(x^2+2x-8)=20x^2$

14. $\dfrac{9x^2+7x+2}{9x^2-3x+2}+\dfrac{7x}{9x^2+2x+2}=-\dfrac{5}{6}$

15. $x^2+\dfrac{x^2}{(x+1)^2}=99$

16. $\dfrac{2x^2}{2-4x^2}=-36x^2-3x+18$

Вариант 15.

1. $(x-10)^2(x^2-20x)+736=0$

2. $(x^2-8x-6)(x^2-8x+9)+14=0$

3. $4\left(\dfrac{x-10}{2x+8}\right)^2-5\left(\dfrac{-2x-8}{x-10}\right)^2=-19$

4. $\dfrac{48x-40}{5x+1}-\dfrac{15x+3}{6x-5}=-10$

5. $(10x^2+7x+7)^2-70x^2-49x-43=0$

6. $x^{14}+x^7-72=0$

7. $9x^4+25x^2-7\,|3x^2-5x|=30x^3+8$

8. $(x+1)(x+8)(x-4)(x+3)=-264$

9. $\dfrac{130}{(x+8)(x-1)}+\dfrac{99}{(x+1)(x+6)}=4$

10. $\dfrac{42}{5x^2-6x-1}=10x^2-12x-10$

11. $x^4+7x^3+16x^2+21x+9=0$

12. $(5x+7)^4-2(20x^2+13x-21)^2-8(4x-3)^4=0$

13. $(x^2+2x-8)(x^2-9x-8)=-28x^2$

14. $\dfrac{8x^2-8x-7}{8x^2+2x-7}+\dfrac{10x}{8x^2+5x-7}=\dfrac{5}{6}$

15. $x^2+\dfrac{4x^2}{(x-2)^2}=60$

16. $\dfrac{3x^2}{2-2x^2}=-8x^2+4x+8$

Вариант 16.

1. $(x-1)^2(x^2-2x)-56=0$

2. $(x^2-3x+6)(x^2-3x-5)-12=0$

3. $4\left(\dfrac{x-10}{-2x+7}\right)^2-7\left(\dfrac{2x-7}{x-10}\right)^2=-27$

4. $\dfrac{81x+81}{4x-9}-\dfrac{16x-36}{9x+9}=-9$

5. $(10x^2-9x-1)^2+40x^2-36x-64=0$

6. $x^{18}-4x^9+3=0$

7. $x^4+9x^2+\ |x^2+3x|=-6x^3+6$

8. $(x+10)(x+2)(x+5)(x+7)=216$

9. $\dfrac{143}{(x-8)(x-6)}+\dfrac{189}{(x+2)(x-16)}=4$

10. $\dfrac{40}{x^2-10x+4}=2x^2-20x+10$

11. $x^4-8x^3-3x^2-24x+9=0$

12. $4(5x+4)^4+27(10x^2+48x+32)^2-7(2x+8)^4=0$

13. $(4x^2+3x-4)(4x^2+8x-4)=84x^2$

14. $\dfrac{4x^2+2x-5}{4x^2-9x-5}+\dfrac{4x}{4x^2+6x-5}=-\dfrac{28}{17}$

15. $x^2+\dfrac{9x^2}{(x+3)^2}=27$

16. $\dfrac{4x^2}{4-x^2}=-6x^2-5x+24$

Вариант 17.

1. $(x-5)^2(x^2-10x)+126=0$

2. $(x^2+2x+5)(x^2+2x-4)+14=0$

3. $\left(\dfrac{-4x-4}{x+4}\right)^2-24\left(\dfrac{-x-4}{-4x-4}\right)^2=-2$

4. $\dfrac{20x+20}{2x-1}-\dfrac{12x-6}{5x+5}=-5$

5. $(4x^2-4x+7)^2-12x^2+12x-91=0$

6. $x^{18}+15x^9+56=0$

7. $x^4+9x^2-38\,|x^2-3x|=6x^3+80$

8. $(x-4)(x+10)(x-1)(x+7)=-260$

9. $\dfrac{30}{(x+6)(x-5)}+\dfrac{39}{(x+4)(x-3)}=1$

10. $\dfrac{60}{3x^2-4x-2}=6x^2-8x-2$

11. $x^4-10x^3+17x^2-40x+16=0$

12. $9(x+5)^4+17(2x^2+2x-40)^2-2(2x-8)^4=0$

13. $(4x^2+x-36)(4x^2+6x-36)=6x^2$

14. $\dfrac{9x^2+6x+2}{9x^2-4x+2}+\dfrac{3x}{9x^2-3x+2}=\dfrac{7}{2}$

15. $x^2+\dfrac{100x^2}{(x+10)^2}=96$

16. $\dfrac{4x^2}{1-9x^2}=-81x^2-9x+9$

Вариант 18.

1. $(x+4)^2(x^2+8x)+55=0$

2. $(x^2-4x-9)(x^2-4x-10)-42=0$

3. $\left(\dfrac{3x-2}{x+5}\right)^2-90\left(\dfrac{-x-5}{3x-2}\right)^2=-1$

4. $\dfrac{9x-9}{6x+7}+\dfrac{12x+14}{x-1}=-9$

5. $(9x^2-6x+1)^2-18x^2+12x-65=0$

6. $x^{14}-12x^7+35=0$

7. $9x^4+16x^2-38\,|3x^2+4x|=-24x^3+39$

8. $(x+1)(x-5)(x-7)(x-1)=189$

9. $\dfrac{60}{(x-7)(x-3)}+\dfrac{110}{(x-2)(x-8)}=3$

10. $\dfrac{80}{x^2+7x-6}=4x^2+28x+8$

11. $x^4-12x^3+24x^2-24x+4=0$

12. $9(5x-4)^4+26(5x^2-29x+20)^2-3(x-5)^4=0$

13. $(x^2+5x-72)(x^2-8x-72)=-42x^2$

14. $\dfrac{6x^2-x+1}{6x^2+4x+1}+\dfrac{9x}{6x^2-9x+1}=-\dfrac{65}{36}$

15. $x^2+\dfrac{36x^2}{(x-6)^2}=28$

16. $\dfrac{2x^2}{4-2x^2}=-18x^2+3x+36$

Вариант 19.

1. $(x-10)^2(x^2-20x)+196=0$

2. $(x^2-8x-8)(x^2-8x-2)-112=0$

3. $4\left(\dfrac{2x-7}{-4x+4}\right)^2-6\left(\dfrac{4x-4}{2x-7}\right)^2=-23$

4. $\dfrac{21x+30}{4x-4}-\dfrac{32x-32}{7x+10}=-5$

5. $(8x^2+10x+1)^2-16x^2-20x-10=0$

6. $x^{14}+9x^7+20=0$

7. $16x^4+4x^2-4\,|4x^2+2x|=-16x^3+96$

8. $(x+6)(x-5)(x-3)(x+4)=-80$

9. $\dfrac{144}{(x+3)(x+4)}+\dfrac{156}{(x+8)(x-1)}=5$

10. $\dfrac{85}{5x^2-x+1}=15x^2-3x+5$

11. $x^4-6x^3+12x^2-12x+4=0$

12. $16(5x-6)^4+31(15x^2-43x+30)^2-2(3x-5)^4=0$

13. $(4x^2+3x-36)(4x^2-3x-36)=40x^2$

14. $\dfrac{6x^2+x-1}{6x^2+8x-1}+\dfrac{3x}{6x^2-5x-1}=-\dfrac{1}{2}$

15. $x^2+\dfrac{81x^2}{(x+9)^2}=40$

16. $\dfrac{6x^2}{2-x^2}=-10x^2+7x+20$

Вариант 20.

1. $(x+9)^2(x^2+18x)+380=0$

2. $(x^2-3x-10)(x^2-3x-4)-16=0$

3. $\left(\dfrac{9x-2}{-3x+2}\right)^2-45\left(\dfrac{3x-2}{9x-2}\right)^2=4$

4. $\dfrac{9x+9}{9x+4}-\dfrac{18x+8}{x+1}=-3$

5. $(8x^2-6x-1)^2-48x^2+36x-10=0$

6. $x^6+x^3-30=0$

7. $16x^4+9x^2+2\,|4x^2-3x|=24x^3+3$

8. $(x-1)(x-10)(x-9)(x-2)=180$

9. $\dfrac{12}{(x-1)(x+10)}+\dfrac{168}{(x+4)(x+5)}=5$

10. $\dfrac{14}{x^2+4x-3}=2x^2+8x-3$

11. $x^4+14x^3+43x^2-42x+9=0$

12. $9(2x-1)^4+26(8x^2+10x-7)^2-3(4x+7)^4=0$

13. $(x^2+3x-54)(x^2+2x-54)=30x^2$

14. $\dfrac{4x^2+8x+3}{4x^2+9x+3}+\dfrac{3x}{4x^2+10x+3}=\dfrac{3}{2}$

15. $x^2+\dfrac{9x^2}{(x+3)^2}=72$

16. $\dfrac{8x^2}{4-9x^2}=-81x^2+6x+36$

Вариант 21.

1. $(x-10)^2(x^2-20x)-864=0$

2. $(x^2+3x-9)(x^2+3x+6)-54=0$

3. $9\left(\dfrac{6x-8}{9x+6}\right)^2-8\left(\dfrac{-9x-6}{6x-8}\right)^2=-14$

4. $\dfrac{6x-15}{3x+2}+\dfrac{12x+8}{2x-5}=-7$

5. $(6x^2-7x-5)^2+36x^2-42x-22=0$

6. $x^{14}-13x^7+30=0$

7. $25x^4+9x^2+2\,|5x^2+3x|=-30x^3+8$

8. $(x-1)(x-4)(x+1)(x+4)=216$

9. $\dfrac{42}{(x-3)(x+6)}+\dfrac{36}{(x+1)(x+2)}=1$

10. $\dfrac{54}{x^2+6x+5}=3x^2+18x+6$

11. $x^4-9x^3+12x^2-18x+4=0$

12. $4(3x+1)^4+15(9x^2+18x+5)^2-54(3x+5)^4=0$

13. $(4x^2+5x-27)(4x^2-2x-27)=-10x^2$

14. $\dfrac{6x^2-6x+2}{6x^2-x+2}+\dfrac{7x}{6x^2-9x+2}=-\dfrac{10}{3}$

15. $x^2+\dfrac{49x^2}{(x-7)^2}=15$

16. $\dfrac{3x^2}{1-3x^2}=12x^2+8x-4$

Вариант 22.

1. $(x-5)^2(x^2-10x)+46=0$

2. $(x^2-6x-7)(x^2-6x+8)-34=0$

3. $4\left(\dfrac{9x-10}{-6x+10}\right)^2-27\left(\dfrac{6x-10}{9x-10}\right)^2=-3$

4. $\dfrac{30x+50}{x+1}-\dfrac{3x+3}{3x+5}=1$

5. $(4x^2-8x+1)^2-56x^2+112x+34=0$

6. $x^{10}-14x^5+40=0$

7. $4x^4+16x^2-5\,|2x^2-4x|=16x^3+6$

8. $(x+4)(x-8)(x-6)(x+2)=-99$

9. $\dfrac{60}{(x-4)(x-5)}+\dfrac{120}{(x+2)(x-11)}=1$

10. $\dfrac{18}{4x^2+5x+7}=8x^2+10x+5$

11. $x^4-16x^3+58x^2+48x+9=0$

12. $4(5x+3)^4+23(10x^2-39x-27)^2-6(2x-9)^4=0$

13. $(x^2+x-63)(x^2+9x-63)=33x^2$

14. $\dfrac{6x^2-x+1}{6x^2+3x+1}+\dfrac{4x}{6x^2+10x+1}=\dfrac{19}{5}$

15. $x^2+\dfrac{16x^2}{(x-4)^2}=20$

16. $\dfrac{2x^2}{2-2x^2}=12x^2+7x-12$

Вариант 23.

1. $(x-1)^2(x^2-2x)-90=0$

2. $(x^2+10x-7)(x^2+10x-6)-210=0$

3. $\left(\dfrac{2x+7}{x-4}\right)^2-12\left(\dfrac{-x+4}{2x+7}\right)^2=1$

4. $\dfrac{20x+100}{9x+1}-\dfrac{9x+1}{x+5}=-1$

5. $(6x^2+5x+4)^2-108x^2-90x+8=0$

6. $x^{18}-14x^9+40=0$

7. $x^4+25x^2-22\,|x^2-5x|=10x^3+48$

8. $(x-2)(x-4)(x+8)(x+6)=-99$

9. $\dfrac{63}{(x+1)(x+6)}+\dfrac{65}{(x+5)(x+2)}=1$

10. $\dfrac{21}{x^2-3x-1}=4x^2-12x+1$

11. $x^4-5x^3-16x^2-20x+16=0$

12. $4(4x+9)^4+31(8x^2-18x-81)^2-8(2x-9)^4=0$

13. $(x^2+4x-54)(x^2-9x-54)=-42x^2$

14. $\dfrac{10x^2+3x-6}{10x^2+x-6}+\dfrac{4x}{10x^2-5x-6}=\dfrac{1}{3}$

15. $x^2+\dfrac{25x^2}{(x-5)^2}=56$

16. $\dfrac{4x^2}{1-3x^2}=-30x^2-3x+10$

Вариант 24.

1. $(x+2)^2(x^2+4x)-5=0$

2. $(x^2-10x-6)(x^2-10x-8)-120=0$

3. $4\left(\dfrac{2x+5}{4x+8}\right)^2-6\left(\dfrac{-4x-8}{2x+5}\right)^2=-23$

4. $\dfrac{80x+90}{3x-9}-\dfrac{12x-36}{8x+9}=-3$

5. $(4x^2-8x-1)^2+12x^2-24x-31=0$

6. $x^6-2x^3-8=0$

7. $9x^4+25x^2-19\,|3x^2-5x|=30x^3+66$

8. $(x-5)(x+7)(x-4)(x+6)=180$

9. $\dfrac{105}{(x-6)(x+3)}+\dfrac{17}{(x+6)(x-9)}=2$

10. $\dfrac{54}{x^2-3x+2}=4x^2-12x-7$

11. $x^4+14x^3+41x^2-56x+16=0$

12. $(x-6)^4-5(x^2-8x+12)^2-36(x-2)^4=0$

13. $(x^2+2x-27)(x^2+x-27)=56x^2$

14. $\dfrac{6x^2-8x+2}{6x^2-2x+2}+\dfrac{5x}{6x^2+8x+2}=\dfrac{20}{3}$

15. $x^2+\dfrac{4x^2}{(x+2)^2}=60$

16. $\dfrac{6x^2}{9-x^2}=-6x^2-5x+54$

Вариант 25.

1. $(x-3)^2(x^2-6x)-162=0$

2. $(x^2+7x+6)(x^2+7x-7)+36=0$

3. $4\left(\dfrac{-4x+5}{8x+2}\right)^2-2\left(\dfrac{-8x-2}{-4x+5}\right)^2=-7$

4. $\dfrac{18x+18}{3x+5}-\dfrac{3x+5}{9x+9}=1$

5. $(9x^2-6x-7)^2-27x^2+18x+23=0$

6. $x^6+4x^3-45=0$

7. $x^4+x^2-\ |x^2+x|=-2x^3+2$

8. $(x+8)(x+1)(x+9)(x+2)=60$

9. $\dfrac{75}{(x-9)(x-7)}+\dfrac{63}{(x-5)(x-11)}=14$

10. $\dfrac{99}{5x^2+7x-9}=10x^2+14x+9$

11. $x^4-8x^3+20x^2-32x+16=0$

12. $(5x-9)^4-12(10x^2-43x+45)^2-64(2x-5)^4=0$

13. $(x^2+5x-80)(x^2-9x-80)=32x^2$

14. $\dfrac{8x^2-5x+3}{8x^2+5x+3}+\dfrac{8x}{8x^2-9x+3}=\dfrac{25}{3}$

15. $x^2+\dfrac{x^2}{(x+1)^2}=24$

16. $\dfrac{4x^2}{1-10x^2}=-90x^2+9x+9$

Вариант 26.

1. $(x-1)^2(x^2-2x)-6=0$

2. $(x^2-8x+9)(x^2-8x-4)+12=0$

3. $\left(\dfrac{-9x+2}{3x-8}\right)^2-36\left(\dfrac{-3x+8}{-9x+2}\right)^2=5$

4. $\dfrac{8x+2}{x-1}-\dfrac{9x-9}{4x+1}=-7$

5. $(6x^2-7x+1)^2-30x^2+35x-11=0$

6. $x^6+15x^3+56=0$

7. $16x^4+x^2-12\,|4x^2+x|=-8x^3+28$

8. $(x-3)(x+4)(x+2)(x-5)=240$

9. $\dfrac{18}{(x-5)(x+6)}+\dfrac{11}{(x+5)(x-4)}=2$

10. $\dfrac{14}{x^2+5x-3}=2x^2+10x+6$

11. $x^4-10x^3+19x^2+30x+9=0$

12. $9(3x-2)^4+2(12x^2+10x-12)^2-32(4x+6)^4=0$

13. $(x^2+2x-45)(x^2+9x-45)=78x^2$

14. $\dfrac{4x^2-3x-3}{4x^2+2x-3}+\dfrac{8x}{4x^2+8x-3}=\dfrac{5}{6}$

15. $x^2+\dfrac{100x^2}{(x+10)^2}=44$

16. $\dfrac{2x^2}{6-x^2}=-6x^2-x+36$

Вариант 27.

1. $(x-1)^2(x^2-2x)-2=0$

2. $(x^2-3x-8)(x^2-3x-2)-55=0$

3. $4\left(\dfrac{5x+9}{-10x+6}\right)^2-2\left(\dfrac{10x-6}{5x+9}\right)^2=-7$

4. $\dfrac{20x+8}{4x+3}+\dfrac{12x+9}{5x+2}=-8$

5. $(6x^2-5x+7)^2-78x^2+65x-49=0$

6. $x^{14}-9x^7+14=0$

7. $x^4+16x^2+4\,|x^2+4x|=-8x^3+45$

8. $(x-5)(x+1)(x-8)(x+4)=-140$

9. $\dfrac{84}{(x+8)(x+1)}+\dfrac{65}{(x+5)(x+4)}=1$

10. $\dfrac{78}{x^2+6x-1}=2x^2+12x-3$

11. $x^4-8x^3+8x^2+32x+16=0$

12. $(4x-7)^4-(8x^2-10x-7)^2-72(2x+1)^4=0$

13. $(4x^2+3x-2)(4x^2-8x-2)=60x^2$

14. $\dfrac{4x^2-10x+3}{4x^2+7x+3}+\dfrac{4x}{4x^2-6x+3}=\dfrac{28}{15}$

15. $x^2+\dfrac{64x^2}{(x+8)^2}=36$

16. $\dfrac{4x^2}{6-10x^2}=-60x^2-5x+36$

Вариант 28.

1. $(x+8)^2(x^2+16x)+495=0$

2. $(x^2+2x-2)(x^2+2x+10)-13=0$

3. $\left(\dfrac{-4x-6}{3x+2}\right)^2-32\left(\dfrac{-3x-2}{-4x-6}\right)^2=-4$

4. $\dfrac{12x-24}{10x+3}+\dfrac{10x+3}{x-2}=-7$

5. $(10x^2+3x+4)^2-20x^2-6x-56=0$

6. $x^{14}-6x^7+8=0$

7. $9x^4+4x^2-20\,|3x^2+2x|=-12x^3+21$

8. $(x-6)(x-8)(x-7)(x-5)=120$

9. $\dfrac{21}{(x-5)(x+6)}+\dfrac{9}{(x-2)(x+3)}=2$

10. $\dfrac{6}{2x^2-5x+1}=6x^2-15x+6$

11. $x^4+10x^3+17x^2+40x+16=0$

12. $4(x+3)^4-(x^2-4x-21)^2-18(x-7)^4=0$

13. $(9x^2+4x-32)(9x^2-4x-32)=-12x^2$

14. $\dfrac{4x^2-8x+3}{4x^2-x+3}+\dfrac{7x}{4x^2+3x+3}=\dfrac{7}{11}$

15. $x^2+\dfrac{x^2}{(x-1)^2}=3$

16. $\dfrac{5x^2}{5-10x^2}=-60x^2-7x+30$

Вариант 29.

1. $(x+9)^2(x^2+18x)-810=0$

2. $(x^2+2x+9)(x^2+2x+8)-56=0$

3. $\left(\dfrac{4x+3}{2x+5}\right)^2-32\left(\dfrac{-2x-5}{4x+3}\right)^2=-4$

4. $\dfrac{30x+25}{4x+3}-\dfrac{24x+18}{6x+5}=-1$

5. $(6x^2+x-3)^2+18x^2+3x-7=0$

6. $x^{14}-4x^7-60=0$

7. $16x^4+25x^2+3\,|4x^2-5x|=40x^3+4$

8. $(x+5)(x+6)(x+1)(x+10)=-36$

9. $\dfrac{80}{(x-6)(x+1)}+\dfrac{98}{(x-2)(x-3)}=5$

10. $\dfrac{80}{x^2+2x+7}=3x^2+6x-1$

11. $x^4+10x^3+20x^2+20x+4=0$

12. $(2x-7)^4+(4x^2-12x-7)^2-20(2x+1)^4=0$

13. $(4x^2+5x-2)(4x^2-8x-2)=30x^2$

14. $\dfrac{6x^2-8x-4}{6x^2-9x-4}+\dfrac{7x}{6x^2-x-4}=\dfrac{5}{2}$

15. $x^2+\dfrac{9x^2}{(x+3)^2}=16$

16. $\dfrac{5x^2}{1-2x^2}=-8x^2-8x+4$

Вариант 30.

1. $(x+7)^2(x^2+14x)-456=0$

2. $(x^2-5x+1)(x^2-5x+10)+14=0$

3. $4\left(\dfrac{x+2}{2x-1}\right)^2-8\left(\dfrac{-2x+1}{x+2}\right)^2=-31$

4. $\dfrac{60x+60}{5x+8}+\dfrac{5x+8}{10x+10}=-5$

5. $(10x^2-7x-8)^2+170x^2-119x-64=0$

6. $x^{14}+3x^7-40=0$

7. $16x^4+x^2-16\,|4x^2-x|=8x^3+36$

8. $(x+8)(x+5)(x+4)(x+7)=40$

9. $\dfrac{21}{(x+1)(x+3)}+\dfrac{80}{(x+6)(x-2)}=2$

10. $\dfrac{48}{4x^2-6x+8}=12x^2-18x-8$

11. $x^4+8x^3+16x^2+16x+4=0$

12. $(2x+3)^4-(8x^2+30x+27)^2-12(4x+9)^4=0$

13. $(x^2+x-36)(x^2+7x-36)=-8x^2$

14. $\dfrac{4x^2+4x-3}{4x^2+8x-3}+\dfrac{7x}{4x^2+2x-3}=\dfrac{11}{6}$

15. $x^2+\dfrac{16x^2}{(x+4)^2}=20$

16. $\dfrac{2x^2}{3-3x^2}=-27x^2-3x+27$

Контрольная: test7/test7.py
Генерация по данным 830558560540715

Ответы

Вариант 1.

1. $-10; -4; -7 \pm 2\sqrt{10}$

2. $-5 \pm \sqrt{17}; -5 \pm \sqrt{33}$

3. $\pm\frac{3}{8}$

4. $-1; -\frac{9}{4}$

5. $-\frac{5}{4}; -\frac{3}{2}; \frac{3}{4}; \frac{1}{2}$

6. $\sqrt[9]{3}; -\sqrt[9]{9}$

7. $1; 2; \frac{3}{2} \pm \frac{1}{2}\sqrt{17}$

8. $-5; 3; -1 \pm 2\sqrt{6}$

9. $-23; 9; -7 \pm 2\sqrt{17}$

10. $1; 7; 4 \pm \sqrt{23}$

11. $\frac{5}{2} \pm \frac{1}{2}\sqrt{13}$

12. $\frac{17}{7}; -13$

13. $-3; \frac{1}{4}; \frac{5}{8} \pm \frac{1}{8}\sqrt{73}$

14. $-\frac{3}{2}; -\frac{1}{2}$

15. $-3 \pm 3\sqrt{3}; 6$

16. $-\frac{3}{2}; \frac{5}{3}; -\frac{1}{6} \pm \frac{1}{6}\sqrt{91}$

Вариант 2.

1. $7 \pm 5\sqrt{2}$

2. $2 \pm \sqrt{2}; 2 \pm \sqrt{10}$

3. $-\frac{19}{6}$

4. $\frac{25}{23}; -\frac{3}{19}$

5. $1; \frac{1}{3}; \frac{1}{2}; -\frac{1}{6}$

6. $\sqrt[7]{4}; -\sqrt[7]{8}$

7. $-1; 2$

8. $4; -7$

9. $-8; 9; \frac{1}{2} \pm \frac{1}{2}\sqrt{17}$

10. $-2; -1; -\frac{3}{2} \pm \frac{1}{2}\sqrt{19}$

11. $-\frac{5}{2} \pm \frac{1}{2}\sqrt{17}$

12. $-\frac{40}{11}; -\frac{24}{13}$

13. $-2; \frac{1}{4}; -1 \pm \frac{1}{2}\sqrt{6}$

14. $-\frac{1}{5}; -\frac{1}{2}$

15. $4 \pm 2\sqrt{6}; -5 \pm \sqrt{15}$

16. $\frac{1}{4} \pm \frac{1}{4}\sqrt{33}; -\frac{2}{5} \pm \frac{3}{5}\sqrt{6}$

Вариант 3.

1. $-8 \pm 2\sqrt{17}$

2. $-1 \pm \sqrt{10}$

3. $\pm\frac{3}{2}$

4. $15; \frac{6}{7}$

5. $\frac{1}{2}; -\frac{5}{4}$

6. $-\sqrt[9]{2}; \sqrt[9]{3}$

7. $-3; 1$

8. $5; -1; 2 \pm \sqrt{43}$

9. $-8; 9; \frac{1}{2} \pm \frac{1}{2}\sqrt{61}$

10. $\frac{5}{3}; -2$

11. $-4 \pm \sqrt{13}$

12. $\frac{20}{9}; \frac{4}{7}$

13. $-2; 4; \frac{1}{2} \pm \frac{1}{2}\sqrt{33}$

14. $-\frac{2}{3}; \frac{3}{2}; -\frac{29}{3} \pm \frac{5}{3}\sqrt{34}$

15. $-\frac{3}{2} \pm \frac{1}{2}\sqrt{33}$

16. $\frac{1}{4} \pm \frac{1}{4}\sqrt{33}; \frac{1}{3} \pm \frac{1}{3}\sqrt{19}$

Вариант 4.

1. $-2 \pm 2\sqrt{2}$

2. $4 \pm \sqrt{26}; 4$

3. $-\frac{2}{3}$

4. $-\frac{2}{3}; -\frac{29}{19}$

5. $\frac{1}{6}; -\frac{3}{2}; \frac{2}{3}; -1$

6. $\sqrt[3]{2}; -\sqrt[3]{4}$

7. $-9; 5$

8. $8 \pm \sqrt{5}; 8$

9. $-9; 8; -\frac{1}{2} \pm \frac{1}{2}\sqrt{94}$

10. $1; -\frac{8}{3}; -\frac{3}{2}; -\frac{1}{6}$

11. $\frac{7}{2} \pm \frac{1}{2}\sqrt{33}$

12. $\frac{1}{10}; -\frac{19}{2}$

13. $-10; 4; 6 \pm 2\sqrt{19}$

14. $-\frac{3}{4}; -\frac{1}{2}$

15. $2 \pm 2\sqrt{3}; -4$

16. $\frac{2}{27} \pm \frac{1}{27}\sqrt{85}; -\frac{1}{27} \pm \frac{1}{27}\sqrt{82}$

Вариант 5.

1. $-10 \pm \sqrt{107}$

2. $-5 \pm \sqrt{23}; -5 \pm 2\sqrt{5}$

3. $\frac{11}{8}$

4. $\frac{2}{9}; -\frac{50}{39}$

5. $\frac{1}{2}; \frac{2}{5}$

6. $\sqrt[7]{5}; \sqrt[7]{6}$

7. $\frac{17}{3}; -4$

8. $-4; -12$

9. $-10; 13; \frac{3}{2} \pm \frac{1}{2}\sqrt{93}$

10. $1 \pm \frac{3}{10}\sqrt{10}; 1$

11. $5 \pm \sqrt{21}$

12. $-\frac{2}{3}; -\frac{2}{7}$

13. $4; -10; -2 \pm 2\sqrt{11}$

14. $-\frac{5}{2}; \frac{1}{3}; -\frac{1}{2}; \frac{5}{3}$

15. $\frac{3}{2} \pm \frac{1}{2}\sqrt{57}$

16. $\frac{3}{4} \pm \frac{1}{4}\sqrt{41}; \frac{1}{4} \pm \frac{1}{4}\sqrt{33}$

Вариант 6.

1. $7 \pm \sqrt{43}; 7 \pm \sqrt{6}$

2. $5 \pm \sqrt{11}; 5 \pm 2\sqrt{7}$

3. $\pm\frac{2}{5}$

4. $-\frac{3}{14}; -\frac{2}{3}$

5. $\frac{1}{5}; \frac{1}{2}$

6. $\sqrt[9]{3}; \sqrt[9]{5}$

7. $\frac{10}{3}; -4$

8. $9; -1; 4 \pm \sqrt{15}$

9. $6; -8; -1 \pm \frac{3}{7}\sqrt{91}$

10. $2; 4; 3 \pm \sqrt{11}$

11. $-\frac{9}{2} \pm \frac{1}{2}\sqrt{69}$

12. $-\frac{15}{2}; \frac{17}{6}$

13. $-4; \frac{1}{4}; \frac{1}{4} \pm \frac{1}{4}\sqrt{17}$

14. $\frac{7}{10}; -\frac{1}{2}; \frac{7}{5}; -1$

15. $-\frac{1}{2} \pm \frac{1}{2}\sqrt{17}$

16. $-\frac{1}{4} \pm \frac{1}{4}\sqrt{17}; \frac{2}{5} \pm \frac{1}{5}\sqrt{29}$

Вариант 7.

1. $9 \pm 2\sqrt{19}; 9 \pm \sqrt{5}$

2. $-\frac{9}{2} \pm \frac{1}{2}\sqrt{97}; -\frac{9}{2} \pm \frac{1}{2}\sqrt{13}$

3. $-\frac{2}{5}$

4. $-4; -21$

5. $-\frac{2}{3}; \frac{1}{3}$

6. $-\sqrt[5]{3}; -\sqrt[5]{4}$

7. $-6; 10$

8. $5; -6$

9. $-21; 4; -\frac{17}{2} \pm \frac{1}{2}\sqrt{57}$

10. $1; -\frac{9}{2}; -\frac{1}{2}; -3$

11. -2

12. $\frac{11}{13}; -1$

13. $\frac{1}{4}; \frac{1}{2}; -2; -1$

14. $\frac{1}{3}; \frac{2}{3}; -\frac{19}{36} \pm \frac{1}{36}\sqrt{73}$

15. $-1 \pm \sqrt{7}$

16. $-\frac{4}{7}; \frac{1}{2}; \frac{2}{3}; -\frac{3}{7}$

Вариант 8.

1. $-10 \pm \sqrt{103}$

2. $5 \pm \sqrt{7}; 5 \pm 4\sqrt{2}$

3. $\frac{7}{16}$

4. $-\frac{17}{7}; -\frac{1}{35}$

5. $-\frac{3}{2}; \frac{1}{3}$

6. $-\sqrt[3]{4}; \sqrt[3]{10}$

7. $-3; 2$

8. $5; -6; -\frac{1}{2} \pm \frac{1}{2}\sqrt{97}$

9. $-15; 7; -4 \pm \sqrt{43}$

10. $4; -1; \frac{3}{2} \pm \frac{1}{2}\sqrt{11}$

11. $-5 \pm \sqrt{21}$

12. $22; \frac{2}{7}$

13. $-2; 4; -6 \pm 2\sqrt{11}$

14. $\frac{1}{2}; \frac{3}{4}$

15. $3; -6$

16. $\frac{1}{4} \pm \frac{1}{4}\sqrt{17}; -\frac{5}{4} \pm \frac{1}{4}\sqrt{41}$

Вариант 9.

1. $-9 \pm \sqrt{73}; -9 \pm 2\sqrt{2}$

2. $-\frac{9}{2} \pm \frac{3}{2}\sqrt{5}; -\frac{9}{2} \pm \frac{1}{2}\sqrt{97}$

3. $\frac{5}{6}$

4. $\frac{38}{49}; -\frac{5}{11}$

5. $-\frac{1}{4}; -\frac{1}{2}; -\frac{3}{8} \pm \frac{1}{8}\sqrt{17}$

6. $-\sqrt[9]{2}; \sqrt[9]{5}$

7. $-8; 7$

8. $9; -1; 4 \pm 2\sqrt{5}$

9. $-14; -1; -\frac{15}{2} \pm \frac{1}{2}\sqrt{5}$

10. $1; -6; -\frac{5}{2} \pm \frac{3}{2}\sqrt{3}$

11. $-\frac{7}{2} \pm \frac{1}{2}\sqrt{33}$

12. $-\frac{26}{7}; -2$

13. $-7; 9$

14. $-\frac{1}{2}; -\frac{1}{3}$

15. $-\frac{7}{2} \pm \frac{1}{2}\sqrt{21}; \frac{5}{2} \pm \frac{3}{2}\sqrt{5}$

16. $2; -\frac{9}{4}; \frac{3}{8} \pm \frac{3}{8}\sqrt{33}$

Вариант 10.

1. $2 \pm \sqrt{7}$

2. $-\frac{1}{2} \pm \frac{1}{2}\sqrt{21}$

3. $-\frac{19}{4}$

4. $\frac{23}{13}; \frac{22}{23}$

5. $-\frac{2}{3}; \frac{1}{2}; -\frac{1}{12} \pm \frac{1}{12}\sqrt{193}$

6. $-\sqrt[3]{4}; -\sqrt[3]{5}$

7. $-4; 3$

8. $-2; -11$

9. $-10; 14; 2 \pm \frac{3}{2}\sqrt{10}$

10. $-1 \pm \frac{4}{3}\sqrt{6}; -1$

11. $5 \pm 3\sqrt{3}$

12. $1; \frac{3}{11}$

13. $-4; \frac{9}{4}; \frac{15}{8} \pm \frac{3}{8}\sqrt{89}$

14. $-\frac{1}{2}; \frac{3}{2}; -\frac{1}{5} \pm \frac{1}{10}\sqrt{79}$

15. $-4 \pm 2\sqrt{6}; 5 \pm \sqrt{15}$

16. $-\frac{7}{4}; 2; \frac{1}{10} \pm \frac{3}{10}\sqrt{39}$

Вариант 11.

1. $5 \pm \sqrt{19}; 5 \pm \sqrt{6}$

2. $\frac{7}{2} \pm \frac{1}{2}\sqrt{61}; \frac{7}{2} \pm \frac{1}{2}\sqrt{57}$

3. $\pm\frac{1}{2}$

4. $-\frac{1}{7}; -\frac{35}{76}$

5. $-\frac{2}{3}; \frac{4}{3}; \frac{1}{3} \pm \frac{1}{3}\sqrt{15}$

6. $-\sqrt[3]{6}; \sqrt[3]{9}$

7. $-2; 3$

8. $4; -3$

9. $-10; 6; -2 \pm \frac{1}{2}\sqrt{82}$

10. $-\frac{3}{2}; -2; -\frac{7}{4} \pm \frac{1}{4}\sqrt{77}$

11. $\frac{5}{2} \pm \frac{1}{2}\sqrt{17}$

12. $\frac{18}{13}; 2$

13. $-2; \frac{1}{4}; \frac{1}{2} \pm \frac{1}{2}\sqrt{3}$

14. $\frac{1}{2}; \frac{1}{5}; -\frac{4}{5} \pm \frac{3}{10}\sqrt{6}$

15. $-1 \pm \sqrt{19}$

16. $\frac{1}{32} \pm \frac{3\sqrt{57}}{32}; -\frac{1}{12} \pm \frac{1}{12}\sqrt{73}$

Вариант 12.

1. $-7; -1; -4 \pm \sqrt{7}$

2. $\frac{3}{2} \pm \frac{3}{2}\sqrt{5}$

3. $\frac{5}{8}$

4. $-\frac{1}{16}; \frac{34}{15}$

5. $0; -\frac{3}{2}; -\frac{1}{2}; -2$

6. $\sqrt[5]{5}; \sqrt[5]{9}$

7. $\frac{7}{5}; -2$

8. $\pm 3; \pm\sqrt{43}$

9. $2; -14; -6 \pm \sqrt{10}$

10. $-2; 4$

11. $-\frac{9}{2} \pm \frac{1}{2}\sqrt{73}$

12. $\frac{25}{13}; \frac{23}{5}$

13. $\frac{9}{4}; -3; \frac{1}{2} \pm \sqrt{7}$

14. $\frac{4}{3}; -\frac{1}{2}; -\frac{4}{9} \pm \frac{1}{9}\sqrt{70}$

15. $\frac{9}{2} \pm \frac{3}{2}\sqrt{5}; -\frac{7}{2} \pm \frac{1}{2}\sqrt{77}$

16. $-\frac{3}{2}; \frac{4}{3}; \frac{1}{5} \pm \frac{1}{5}\sqrt{51}$

Вариант 13.

1. $2 \pm \sqrt{2}$

2. $2 \pm \sqrt{13}; 2 \pm \sqrt{10}$

3. -1

4. $-\frac{15}{13}; 21$

5. $-\frac{7}{4}; \frac{1}{2}; -\frac{5}{8} \pm \frac{1}{8}\sqrt{97}$

6. $\sqrt[5]{5}; \sqrt[5]{8}$

7. $\frac{5}{2}; -2$

8. $-8; -1$

9. $\pm 8; -18; -2$

10. $-\frac{5}{2}; 1; -\frac{3}{4} \pm \frac{1}{4}\sqrt{11}$

11. $5 \pm \sqrt{22}$

12. $\frac{17}{25}; 5$

13. $\frac{9}{4}; -3; -1 \pm \frac{1}{2}\sqrt{31}$

14. $\frac{1}{2}; \frac{1}{4}$

15. $-4 \pm 2\sqrt{2}; 3 \pm \sqrt{15}$

16. $\frac{1}{12} \pm \frac{1}{12}\sqrt{65}; -\frac{1}{27} \pm \frac{5\sqrt{13}}{27}$

Вариант 14.

1. $10 \pm \sqrt{10}; 10 \pm 3\sqrt{10}$

2. $0; -8; -4 \pm 2\sqrt{2}$

3. $\frac{5}{4}$

4. $\frac{7}{13}; -\frac{21}{47}$

5. $-\frac{3}{5}; \frac{1}{2}; -\frac{1}{20} \pm \frac{3\sqrt{89}}{20}$

6. $\sqrt[7]{3}; \sqrt[7]{8}$

7. $-\frac{4}{3}; 1$

8. $-9; -4$

9. $3; 9; 6 \pm \sqrt{2}$

10. $-1 \pm \frac{3}{4}\sqrt{6}; -1$

11. $-2 \pm \sqrt{2}$

12. $-\frac{5}{3}; -\frac{5}{9}$

13. $1; -8; -2; 4$

14. $-\frac{2}{3}; -\frac{1}{3}$

15. $-\frac{11}{2} \pm \frac{1}{2}\sqrt{77}; \frac{9}{2} \pm \frac{3}{2}\sqrt{13}$

16. $-\frac{2}{3}; \frac{3}{4}; -\frac{1}{12} \pm \frac{1}{12}\sqrt{73}$

Вариант 15.

1. $10 \pm 2\sqrt{2}; 10 \pm 2\sqrt{23}$

2. $4 \pm 2\sqrt{2}; 4 \pm \sqrt{21}$

3. 3

4. $\frac{21}{19}; \frac{7}{27}$

5. $-\frac{1}{5}; -\frac{1}{2}$

6. $\sqrt[7]{8}; -\sqrt[7]{9}$

7. $\frac{8}{3}; -1$

8. $3; -7; -2 \pm 2\sqrt{3}$

9. $5; -12; -\frac{7}{2} \pm \frac{1}{2}\sqrt{46}$

10. $2; -\frac{4}{5}$

11. $-\frac{5}{2} \pm \frac{1}{2}\sqrt{13}$

12. $\frac{13}{3}; -\frac{1}{13}$

13. $-2; 4; \frac{5}{2} \pm \frac{1}{2}\sqrt{57}$

14. $-\frac{1}{2}; \frac{7}{4}; -\frac{17}{16} \pm \frac{3}{16}\sqrt{57}$

15. $-3 \pm \sqrt{21}; 5 \pm \sqrt{5}$

16. $\frac{3}{8} \pm \frac{1}{8}\sqrt{73}; -\frac{1}{8} \pm \frac{1}{8}\sqrt{65}$

Вариант 16.

1. $1 \pm 2\sqrt{2}$

2. $\frac{3}{2} \pm \frac{1}{2}\sqrt{33}$

3. $\frac{27}{4}$

4. $\frac{9}{43}; -\frac{36}{23}$

5. $-\frac{1}{2}; \frac{7}{5}$

6. $1; \sqrt[9]{3}$

7. $-2; -1; -\frac{3}{2} \pm \frac{1}{2}\sqrt{17}$

8. $-11; -1$

9. $-5; 19; 7 \pm \sqrt{21}$

10. $0; 10; 1; 9$

11. $\frac{9}{2} \pm \frac{1}{2}\sqrt{69}$

12. $0; -\frac{4}{3}$

13. $\frac{1}{4}; -4; \frac{1}{2} \pm \frac{1}{2}\sqrt{5}$

14. $-\frac{5}{2}; \frac{1}{2}; \frac{2}{3} \pm \frac{1}{6}\sqrt{61}$

15. $\frac{3}{2} \pm \frac{3}{2}\sqrt{5}$

16. $-\frac{2}{3} \pm \frac{2}{3}\sqrt{10}; \frac{1}{4} \pm \frac{1}{4}\sqrt{65}$

Вариант 17.

1. $5 \pm \sqrt{7}; 5 \pm 3\sqrt{2}$

2. $-1 \pm \sqrt{3}$

3. ± 2

4. $-\frac{1}{3}; -\frac{23}{14}$

5. $-\frac{1}{2}; \frac{3}{2}$

6. $-\sqrt[9]{7}; -\sqrt[3]{2}$

7. $-5; 8$

8. $-9; 3; -3 \pm \sqrt{29}$

9. $-10; 9; -\frac{1}{2} \pm \frac{1}{2}\sqrt{85}$

10. $\frac{7}{3}; -1$

11. $\frac{9}{2} \pm \frac{1}{2}\sqrt{65}$

12. $-\frac{7}{5}; -23$

13. $\pm 3; \frac{9}{4}; -4$

14. $\frac{1}{3}; \frac{2}{3}$

15. $2 \pm 2\sqrt{11}$

16. $\frac{1}{54} \pm \frac{5\sqrt{13}}{54}; -\frac{2}{27} \pm \frac{1}{27}\sqrt{85}$

Вариант 18.

1. $-4 \pm \sqrt{11}; -4 \pm \sqrt{5}$

2. $2 \pm 2\sqrt{5}; 2 \pm \sqrt{7}$

3. $-\frac{13}{6}$

4. $-\frac{4}{9}; -\frac{11}{15}$

5. $-\frac{2}{3}; \frac{4}{3}$

6. $\sqrt[7]{5}; \sqrt[7]{7}$

7. $-\frac{13}{3}; 3$

8. $8; -2$

9. $13; -3; 5 \pm \frac{1}{3}\sqrt{51}$

10. $1; -8; -\frac{7}{2} \pm \frac{1}{2}\sqrt{33}$

11. $5 \pm \sqrt{23}$

12. $\frac{17}{16}; \frac{1}{2}$

13. $-8; 9; 1 \pm \sqrt{73}$

14. $\frac{1}{3}; \frac{1}{2}$

15. $-1 \pm \sqrt{13}$

16. $-\frac{3}{2}; \frac{4}{3}; \frac{1}{6} \pm \frac{1}{6}\sqrt{73}$

Вариант 19.

1. $10 \pm 7\sqrt{2}; 10 \pm \sqrt{2}$

2. $4 \pm \sqrt{10}; 4 \pm 4\sqrt{2}$

3. $\frac{9}{4}$

4. $\frac{2}{53}; -\frac{14}{3}$

5. $-\frac{3}{2}; -\frac{1}{2}; -\frac{3}{4}; \frac{1}{4}$

6. $-\sqrt[7]{4}; -\sqrt[7]{5}$

7. $\frac{3}{2}; -2$

8. $-5; 4; -\frac{1}{2} \pm \frac{1}{2}\sqrt{89}$

9. $5; -12; -\frac{7}{2} \pm \frac{1}{2}\sqrt{33}$

10. $1; -\frac{4}{5}$

11. $2 \pm \sqrt{2}$

12. $\frac{19}{17}; \frac{29}{23}$

13. $\pm 4; \pm\frac{9}{4}$

14. $\frac{1}{3}; -\frac{1}{2}; \frac{1}{18} \pm \frac{1}{18}\sqrt{55}$

15. $1 \pm \sqrt{19}$

16. $-\frac{1}{4} \pm \frac{1}{4}\sqrt{33}; \frac{3}{5} \pm \frac{1}{5}\sqrt{59}$

Вариант 20.

1. $-9 \pm 2\sqrt{19}; -9 \pm \sqrt{5}$

2. $\frac{3}{2} \pm \frac{1}{2}\sqrt{57}; \frac{3}{2} \pm \frac{1}{2}\sqrt{17}$

3. $\frac{4}{9}$

4. $-\frac{11}{21}; -\frac{1}{6}$

5. $-\frac{3}{4}; \frac{1}{4}; \frac{1}{2}; \frac{3}{2}$

6. $\sqrt[3]{5}; -\sqrt[3]{6}$

7. $-\frac{1}{4}; 1$

8. $0; 11; 7; 4$

9. $2; -11; -\frac{9}{2} \pm \frac{1}{2}\sqrt{97}$

10. $-5; 1; -2 \pm \frac{1}{2}\sqrt{14}$

11. $-\frac{7}{2} \pm \frac{1}{2}\sqrt{61}$

12. $-\frac{2}{5}; 5$

13. $9; -6; -4 \pm \sqrt{70}$

14. $-\frac{3}{2}; -\frac{1}{2}; -\frac{3}{4}; -1$

15. $3 \pm 3\sqrt{3}; -6$

16. $\frac{2}{27} \pm \frac{2\sqrt{82}}{27}; -\frac{1}{27} \pm \frac{5\sqrt{13}}{27}$

Вариант 21.

1. $10 \pm 6\sqrt{3}$

2. $-\frac{3}{2} \pm \frac{1}{2}\sqrt{57}$

3. $\frac{1}{3}$

4. $\frac{3}{5}; \frac{7}{18}$

5. $-\frac{1}{3}; \frac{3}{2}; \frac{7}{12} \pm \frac{1}{12}\sqrt{73}$

6. $\sqrt[7]{3}; \sqrt[7]{10}$

7. $\frac{2}{5}; -1$

8. ± 5

9. $8; -11; -\frac{3}{2} \pm \frac{1}{2}\sqrt{33}$

10. $-4; -2; -3 \pm \sqrt{10}$

11. $4 \pm \sqrt{14}$

12. $-\frac{17}{15}; -\frac{13}{3}$

13. $\frac{9}{4}; -3; \pm\frac{3}{2}\sqrt{3}$

14. $\frac{1}{2}; \frac{2}{3}$

15. $-\frac{1}{2} \pm \frac{1}{2}\sqrt{29}$

16. $-\frac{2}{3}; \frac{1}{2}; -\frac{1}{4} \pm \frac{1}{12}\sqrt{57}$

Вариант 22.

1. $5 \pm \sqrt{23}; 5 \pm \sqrt{2}$

2. $3 \pm 3\sqrt{2}$

3. $\frac{25}{18}$

4. $-\frac{11}{7}; -\frac{11}{6}$

5. $\frac{5}{2}; -\frac{1}{2}; 1 \pm \frac{1}{2}\sqrt{11}$

6. $\sqrt[5]{4}; \sqrt[5]{10}$

7. $-1; 3$

8. $7; -3; 2 \pm 3\sqrt{3}$

9. $-10; 1; 8; 19$

10. $-\frac{1}{4}; -1$

11. $4 \pm \sqrt{19}$

12. $\frac{1}{4}; -\frac{15}{8}$

13. $-7; 9; -6 \pm 3\sqrt{11}$

14. $-\frac{1}{2}; -\frac{1}{3}; -\frac{2}{3} \pm \frac{1}{6}\sqrt{10}$

15. $2; -4$

16. $-\frac{1}{8} \pm \frac{1}{8}\sqrt{65}; -\frac{1}{6} \pm \frac{1}{6}\sqrt{37}$

Вариант 23.

1. $1 \pm \sqrt{10}$

2. $-5 \pm \sqrt{46}; -5 \pm \sqrt{17}$

3. $\frac{1}{4}$

4. $-\frac{21}{13}; 6$

5. $-\frac{3}{2}; -\frac{4}{3}; \frac{1}{2}; \frac{2}{3}$

6. $\sqrt[9]{4}; \sqrt[9]{10}$

7. $-3; 8$

8. $3; -7; -2 \pm 3\sqrt{3}$

9. $-15; 8; -\frac{7}{2} \pm \frac{1}{2}\sqrt{17}$

10. $1; 2; \frac{3}{2} \pm \sqrt{5}$

11. $4 \pm 2\sqrt{3}$

12. $-\frac{9}{2}; -\frac{9}{10}$

13. $9; -6; 1 \pm \sqrt{55}$

14. $-\frac{6}{5}; \frac{1}{2}; \frac{1}{10} \pm \frac{1}{10}\sqrt{61}$

15. $-2 \pm 2\sqrt{6}$

16. $-\frac{1}{2}; \frac{2}{3}; -\frac{2}{15} \pm \frac{1}{15}\sqrt{79}$

Вариант 24.

1. $-2 \pm \sqrt{5}$

2. $5 \pm \sqrt{21}; 5 \pm \sqrt{43}$

3. $-\frac{9}{4}$

4. $-\frac{9}{52}; -\frac{27}{13}$

5. $\frac{5}{2}; -\frac{1}{2}$

6. $-\sqrt[3]{2}; \sqrt[3]{4}$

7. $\frac{11}{3}; -2$

8. $3; -5; -1 \pm 3\sqrt{5}$

9. $-8; 11; \frac{3}{2} \pm \frac{3}{2}\sqrt{21}$

10. $4; -1$

11. $-\frac{7}{2} \pm \frac{1}{2}\sqrt{65}$

12. $0; 3$

13. $-3; 9; -\frac{9}{2} \pm \frac{3}{2}\sqrt{21}$

14. $-\frac{2}{3}; -\frac{1}{2}$

15. $3 \pm \sqrt{21}; -5 \pm \sqrt{5}$

16. $\frac{1}{3} \pm \frac{1}{3}\sqrt{82}; -\frac{3}{4} \pm \frac{3}{4}\sqrt{17}$

Вариант 25.

1. $3 \pm 3\sqrt{2}$

2. $-\frac{7}{2} \pm \frac{1}{2}\sqrt{41}; -\frac{7}{2} \pm \frac{1}{2}\sqrt{61}$

3. $\frac{1}{2}$

4. $-\frac{2}{3}; -\frac{23}{21}$

5. $-\frac{2}{3}; \frac{4}{3}; \frac{1}{3} \pm \frac{1}{3}\sqrt{10}$

6. $\sqrt[3]{5}; -\sqrt[3]{9}$

7. $-2; 1$

8. $-3; -7; -5 \pm \sqrt{21}$

9. $12; 4; 8 \pm \frac{3}{7}\sqrt{21}$

10. $1; -\frac{12}{5}$

11. $3 \pm \sqrt{5}$

12. $\frac{11}{3}; \frac{29}{13}$

13. $16; -5; -\frac{7}{2} \pm \frac{3}{2}\sqrt{41}$

14. $\frac{3}{4}; \frac{1}{2}$

15. $-3 \pm \sqrt{3}; 2 \pm 2\sqrt{2}$

16. $-\frac{1}{3}; \frac{3}{10}; \frac{1}{15} \pm \frac{1}{30}\sqrt{94}$

Вариант 26.

1. $1 \pm \sqrt{3}$

2. $4 \pm 2\sqrt{2}; 4 \pm \sqrt{19}$

3. $\frac{13}{9}$

4. $\frac{7}{17}; -\frac{2}{3}$

5. $\frac{5}{3}; \pm\frac{1}{2}; \frac{2}{3}$

6. $-\sqrt[3]{7}; -2$

7. $\frac{7}{4}; -2$

8. $6; -5$

9. $6; -7; -\frac{1}{2} \pm \frac{1}{2}\sqrt{91}$

10. $-4; -1; -\frac{5}{2} \pm \frac{1}{2}\sqrt{41}$

11. $\frac{5}{2} \pm \frac{1}{2}\sqrt{37}$

12. $-\frac{30}{7}; -\frac{18}{25}$

13. $-5; 9; -\frac{15}{2} \pm \frac{9}{2}\sqrt{5}$

14. $-\frac{1}{2}; \frac{3}{2}; -4 \pm \frac{1}{2}\sqrt{67}$

15. $1 \pm \sqrt{21}$

16. $\frac{1}{4} \pm \frac{1}{4}\sqrt{97}; -\frac{1}{3} \pm \frac{1}{3}\sqrt{55}$

Вариант 27.

1. $1 \pm \sqrt{2}$

2. $\frac{3}{2} \pm \frac{1}{2}\sqrt{61}$

3. $-\frac{3}{5}$

4. $-\frac{1}{2}; -\frac{13}{22}$

5. $0; \frac{5}{6}; \frac{1}{3}; \frac{1}{2}$

6. $\sqrt[7]{2}; \sqrt[7]{7}$

7. $-5; 1$

8. $6; -2; 2 \pm \sqrt{29}$

9. $8; -17; -\frac{9}{2} \pm \frac{1}{2}\sqrt{21}$

10. $-5; -1; -3 \pm \frac{1}{2}\sqrt{66}$

11. $2 \pm 2\sqrt{2}$

12. $-5; \frac{2}{5}$

13. $-2; \frac{1}{4}; \frac{3}{2} \pm \frac{1}{2}\sqrt{11}$

14. $\frac{1}{2}; \frac{3}{2}; -3 \pm \frac{1}{2}\sqrt{33}$

15. $1 \pm \sqrt{17}$

16. $-\frac{3}{4}; \frac{4}{5}; -\frac{1}{15} \pm \frac{2}{15}\sqrt{34}$

Вариант 28.

1. $-11; -5; -8 \pm \sqrt{55}$

2. $1; -3$

3. ± 1

4. $\frac{5}{14}; \frac{3}{13}$

5. $\frac{1}{2}; -\frac{4}{5}$

6. $\sqrt[7]{2}; \sqrt[7]{4}$

7. $\frac{7}{3}; -3$

8. $10; 3$

9. $6; -7; -\frac{1}{2} \pm \frac{1}{2}\sqrt{37}$

10. $0; \frac{5}{2}; 1; \frac{3}{2}$

11. $-\frac{9}{2} \pm \frac{1}{2}\sqrt{65}$

12. $3; 27$

13. $\pm\frac{16}{9}; \pm 2$

14. $\frac{1}{2}; \frac{3}{2}; -\frac{5}{4} \pm \frac{1}{4}\sqrt{13}$

15. $-\frac{1}{2} \pm \frac{1}{2}\sqrt{5}$

16. $\frac{1}{40} \pm \frac{3\sqrt{89}}{40}; -\frac{1}{12} \pm \frac{1}{12}\sqrt{73}$

Вариант 29.

1. $-9 \pm 3\sqrt{10}$

2. -1

3. $-\frac{13}{8}$

4. $-\frac{43}{54}; -1$

5. $-\frac{2}{3}; \frac{1}{3}; \pm\frac{1}{2}$

6. $-\sqrt[7]{6}; \sqrt[7]{10}$

7. $\frac{1}{4}; 1; \frac{5}{8} \pm \frac{1}{8}\sqrt{41}$

8. $-4; -7; -\frac{11}{2} \pm \frac{1}{2}\sqrt{73}$

9. $-4; 9; \frac{5}{2} \pm \frac{3}{10}\sqrt{65}$

10. $1; -3$

11. $-4 \pm \sqrt{14}$

12. $-\frac{9}{2}; \frac{5}{6}$

13. $-2; \frac{1}{4}; \frac{5}{4} \pm \frac{1}{4}\sqrt{33}$

14. $\frac{4}{3}; -\frac{1}{2}; \frac{31}{36} \pm \frac{5\sqrt{73}}{36}$

15. $1 \pm \sqrt{7}$

16. $\frac{1}{8} \pm \frac{1}{8}\sqrt{33}; -\frac{5}{8} \pm \frac{1}{8}\sqrt{57}$

Вариант 30.

1. $-7 \pm \sqrt{57}$

2. $\frac{5}{2} \pm \frac{1}{2}\sqrt{13}$

3. $-\frac{3}{4}$

4. $-\frac{38}{35}; -\frac{28}{25}$

5. $0; \frac{7}{10}; \frac{1}{2}; \frac{1}{5}$

6. $\sqrt[7]{5}; -\sqrt[7]{8}$

7. $\frac{9}{4}; -2$

8. $-9; -3$

9. $-10; 6; -2 \pm \frac{1}{2}\sqrt{14}$

10. $2; -\frac{1}{2}$

11. $-3 \pm \sqrt{7}$

12. $-\frac{5}{2}; -\frac{21}{10}$

13. $-9; 4; -\frac{3}{2} \pm \frac{3}{2}\sqrt{17}$

14. $-\frac{1}{2}; \frac{3}{2}; -\frac{13}{10} \pm \frac{1}{5}\sqrt{61}$

15. $4; -2$

16. $-\frac{1}{9} \pm \frac{1}{9}\sqrt{82}; \frac{1}{18} \pm \frac{5\sqrt{13}}{18}$