

Solve each radical equation.

1.  $\sqrt{2x+1} = 3$

2.  $\sqrt{2-y} + 1 = 5$

3.  $5 - \sqrt{2k} = 3$

4.  $9 - \sqrt{t+2} = 5$

5.  $3 - \sqrt{x+1} = 0$

6.  $\sqrt[3]{r} = 2$

7.  $\sqrt{x} - 3 = 5$

8.  $3 - \sqrt{y+3} = 0$

9.  $4 - \sqrt{x+1} = 5$

10.  $5 - \sqrt{x+3} = 3$

11.  $t = \sqrt{6t-9}$

12.  $t = 2\sqrt{t-1}$

13.  $x + 2\sqrt{x+1} = 7$

14.  $x = \sqrt{6x+18} - 3$

15.  $x + 2 = \sqrt{2x+3}$

16.  $3\sqrt{x-2} + 2 = x$

17.  $x + 3\sqrt{x-2} = 12$

18.  $a - 4 = 2\sqrt{a-5}$

19.  $\sqrt{x^2+3x-2} - x = 1$

20.  $x - 1 + \sqrt{x^2+3} = 0$

21.  $\sqrt{x^2-3x-1} = 3$

22.  $\sqrt{x} + \sqrt{x-7} = 7$

23.  $2 = \sqrt{x-5} - \sqrt{x+16}$

24.  $\sqrt{x} + \sqrt{x+11} = 11$

25.  $\sqrt{x+3} + \sqrt{x} = 5$

26.  $\sqrt{x+1} = 2 - \sqrt{x}$

27.  $3\sqrt{c} - 1 = \sqrt{c} + 1$

28.  $\sqrt{m+10} - \sqrt{m-6} = 2$

29.  $\sqrt{2x+4} = 3 - \sqrt{2x}$

30.  $2\sqrt{3w-5} - 3\sqrt{w+1} = 0$

31.  $\sqrt{4s+3} = 2\sqrt{s-1} + 1$

32.  $\sqrt{x} - \sqrt{x+8} = 8$

33.  $\sqrt{3+x} + \sqrt{x} = \frac{6}{\sqrt{3+x}}$

34.  $\frac{5}{\sqrt{x-1}} + \frac{\sqrt{x+4}}{2} = 2\sqrt{x-1}$

35.  $\sqrt{x+7} = 2 - \sqrt{x-5}$

36.  $2\sqrt{x+1} - \sqrt{2x} = \sqrt{x-4}$

37.  $2\sqrt{x} - \sqrt{4x-22} = \sqrt{2}$

38.  $\sqrt{x+9} - \sqrt{x+2} = \sqrt{4x-27}$

Solve each equation for  $x$ .

1.  $a + b = \frac{c + a}{x}$

2.  $\frac{1}{a} - \frac{2}{x} = \frac{3}{b}$

3.  $\frac{a}{x} + 1 = \frac{2}{x}$

4.  $\frac{1}{a} + \frac{1}{b} = \frac{c}{x}$

Solve each rational equation. If there is no solution then write *no solution*.

5.  $\frac{x+1}{5} = \frac{x+3}{3}$

6.  $a + \frac{25}{a} = 10$

7.  $\frac{4}{b-4} - \frac{3}{b-3} = 1$

8.  $\frac{1}{t^2} - 16 = 0$

9.  $\frac{1}{x-3} = \frac{8}{x^2-9}$

10.  $\frac{5}{x-2} - \frac{2}{x+2} = \frac{3}{x^2-4}$

11.  $\frac{3}{y} = 2 + \frac{1}{y}$

12.  $\frac{5}{x^2-7x+12} = \frac{2}{x-3} + \frac{5}{x-4}$

13.  $\frac{4}{y-4} - \frac{3}{y-3} = 1$

14.  $\frac{3}{2} - \frac{z}{5} = \frac{1}{10} + \frac{3z}{20}$

15.  $1 - \frac{3}{b} = \frac{10}{b^2}$

16.  $\frac{3}{x^2-16} + \frac{1}{2x+8} = 0$

17.  $\frac{x+2}{x^2-4} = \frac{3}{x-6}$

18.  $\frac{x}{x-4} + \frac{6}{x-3} = \frac{16}{(x-4)(x-3)}$

19.  $\frac{8}{a^2} + 1 = \frac{9}{a}$

20.  $\frac{2}{x+2} + \frac{1}{x-2} = \frac{3}{x}$

21.  $x - \frac{12}{x} = 1$

22.  $5 - \frac{2}{2x-2} = \frac{3}{x^2-4}$

23.  $\frac{3}{x+2} = \frac{4}{x-1}$

24.  $\frac{x}{x^2-1} + \frac{2}{x+1} = \frac{1}{2x-2}$

25.  $\frac{2}{p} = 3 + \frac{1}{p}$

26.  $\frac{2}{4t^2-9} + \frac{1}{2t-3} = \frac{3}{2t+3}$

27.  $\frac{1}{x-2} + \frac{2}{x(x-1)} + \frac{2}{x(x-1)(x-2)} = 0$