Math Worksheets

Solving Rational Equations and Complex Fractions

✎ **Solve each equation. Remember to check for extraneous solutions.**

1) $\dfrac{x-1}{x+3} = \dfrac{2x-2}{x-3}$

2) $\dfrac{1}{x} = \dfrac{5}{6x} + 2$

3) $\dfrac{3x-4}{6x+1} = \dfrac{x+4}{x-1}$

4) $\dfrac{1}{6b^2} + \dfrac{1}{6b} = \dfrac{1}{b^2}$

5) $\dfrac{2x-1}{5x+1} = \dfrac{3x-4}{x-7}$

6) $\dfrac{1}{3n^2} - \dfrac{1}{n} = \dfrac{1}{4n^2}$

7) $\dfrac{1}{8b^2} = \dfrac{1}{4b^2} - \dfrac{1}{2b}$

8) $\dfrac{1}{n-4} - 2 = \dfrac{3}{n-4}$

9) $\dfrac{4}{r-2} = -\dfrac{8}{r+2}$

10) $2 = \dfrac{2}{x^2+4x} + \dfrac{2x+2}{x}$

11) $\dfrac{3}{x} = 7 + \dfrac{2}{3x}$

12) $\dfrac{x+3}{x^2-x} - 2 = \dfrac{1}{x^2-x}$

13) $\dfrac{x-2}{x+5} - 1 = \dfrac{1}{x+2}$

14) $\dfrac{1}{12x^2} = \dfrac{1}{6x^2} - \dfrac{1}{2x}$

15) $\dfrac{x+3}{x^2+2x} = \dfrac{x}{x^2+2x} - \dfrac{6}{x+2}$

16) $1 = \dfrac{5}{2x^2+4x} + \dfrac{x+2}{2x}$

✎ **Simplify each expression.**

17) $\dfrac{\frac{3}{5}}{\frac{4}{45} - \frac{5}{18}} =$

18) $\dfrac{\frac{17}{2}}{-7\frac{4}{15}} =$

19) $\dfrac{7}{\frac{7}{x} + \frac{3}{4x}} =$

20) $\dfrac{2x^2}{\frac{3}{8} - \frac{3}{x}} =$

21) $\dfrac{\frac{2}{x-1} - \frac{1}{x+4}}{\frac{3}{x^2+9x+20}} =$

22) $\dfrac{\frac{14}{x-1}}{\frac{14}{7} - \frac{14}{42}} =$

23) $\dfrac{1 + \frac{8}{x-4}}{1 - \frac{4}{x-4}} =$

24) $\dfrac{\frac{1}{3} - \frac{x+2}{6}}{\frac{x^2}{4} - \frac{2}{3}} =$

Answers of Worksheets

Solving rational equations and complex fractions

1) $\{1, -9\}$

2) $\{\frac{1}{12}\}$

3) $\{\frac{-3}{3}, 0\}$

4) $\{5\}$

5) $\{-\frac{11}{13}, 1\}$

6) $\{\frac{1}{12}\}$

7) $\{\frac{1}{4}\}$

8) $\{3\}$

9) $\{\frac{2}{3}\}$

10) $\{-5\}$

11) $\{\frac{1}{3}\}$

12) $\{2, -\frac{1}{2}\}$

13) $\{-\frac{19}{8}\}$

14) $\{\frac{1}{6}\}$

15) $\{-\frac{1}{2}\}$

16) $\{3, -3\}$

17) $-\frac{54}{17}$

18) $-1\frac{37}{218}$

19) $\frac{28x}{31}$

20) $\frac{16\ ^3}{3x-24}$

21) $\frac{(x+9)(x+5)}{3\,(x-1)}$

22) $\frac{42}{5(x-1)}$

23) $\frac{x+4}{x-8}$

24) $-\frac{2\,x}{3x^2-8}$