

Solving Rational Equations ... Set 2

 Solve each equation. Remember to check for extraneous solutions.

$$1) \frac{2x-3}{x+1} = \frac{x+6}{x-2}$$

$$9) \frac{5}{r-2} = -\frac{10}{r+2} + 7$$

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

$$10) 1 = \frac{1}{x^2+2x} + \frac{x-1}{x}$$

$$3) \frac{2x-3}{x+1} = \frac{x+6}{x-2}$$

$$11) \frac{1}{x} = 8 + \frac{6}{9x}$$

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

$$12) \frac{x+5}{x^2-2x} - 1 = \frac{1}{x^2-2x}$$

$$5) \frac{3x-2}{9x+1} = \frac{2x-5}{6x-5}$$

$$13) \frac{x-2}{x+3} - 1 = \frac{1}{x+2}$$

$$6) \frac{1}{n^2} + \frac{1}{n} = \frac{1}{2n^2}$$

$$14) \frac{1}{6x^2} = \frac{1}{3x^2} - \frac{1}{x}$$

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

$$15) \frac{x+5}{x^2-x} = \frac{1}{x^2+x} - \frac{x-6}{x+1}$$

$$8) \frac{1}{n-8} - 1 = \frac{7}{n-8}$$

$$16) 1 = \frac{1}{x^2-2x} + \frac{x-1}{x}$$

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Answers

Solving rational equations and complex fractions

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

2) $\{-\frac{1}{5}\}$

3) $\{0, 14\}$

4) $\{-\frac{15}{16}\}$

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

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

7) $\{\frac{1}{8}\}$

8) $\{2\}$

9) $\{-\frac{6}{7}, 3\}$

10) $\{-1\}$

11) $\{\frac{1}{24}\}$

12) $\{4, -1\}$


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

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

15) $\{-\frac{1}{4}\}$

16) $\{4, 1\}$

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 Simplify each expression.

$$17) \frac{-1\frac{11}{12}}{-3} =$$

$$18) \frac{\frac{4}{5}}{\frac{2}{25} - \frac{5}{16}} =$$

$$19) \frac{\frac{14}{3}}{-6\frac{2}{11}} =$$

$$20) \frac{9}{\frac{9}{x} + \frac{2}{3x}} =$$

$$21) \frac{x^2}{\frac{4}{5} - \frac{4}{x}} =$$

$$22) \frac{\frac{4}{x-3} - \frac{2}{x+2}}{\frac{8}{x^2 + 6x + 8}} =$$

$$23) \frac{\frac{16}{x-1}}{\frac{16}{5} - \frac{16}{25}} =$$

$$24) \frac{2 + \frac{6}{x-4}}{2 - \frac{4}{x-4}} =$$

$$25) \frac{\frac{1}{2} - \frac{x+5}{4}}{\frac{x^2}{2} - \frac{5}{2}} =$$

$$26) \frac{\frac{x-6}{2} - \frac{x-2}{x-6}}{\frac{36}{x-2} + \frac{4}{9}} =$$

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Answers

$$17) \frac{23}{36}$$

$$22) \frac{(x+7)(x+4)}{4(x-3)}$$

$$18) -\frac{320}{93}$$

$$23) \frac{25}{4x-4}$$

$$19) -\frac{77}{102}$$

$$24) \frac{x-1}{x-6}$$

$$20) \frac{27x}{29}$$

$$25) \frac{-3-x}{2x^2-10}$$

$$21) \frac{5x^2}{4x-20}$$

$$26) \frac{3x^3 - 60x^2 + 252x - 288 - x}{584x + 8x^2 - 3792}$$