

Solving Rational Equations

Solve each equation. Remember to check for extraneous solutions.

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

$$2) \frac{1}{n} = \frac{5}{n^2 - 4n} - \frac{n - 3}{n^2 - 4n}$$

$$3) 4 = \frac{n - 4}{n - 6} + \frac{2}{n - 6}$$

$$4) \frac{1}{x^2 - 10x + 24} + \frac{1}{x - 6} = \frac{4}{x^2 - 10x + 24}$$

$$5) 5 = \frac{2}{k - 1} - \frac{k + 5}{k - 1}$$

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

$$7) \frac{4}{r} + \frac{4r^2 + 8r - 96}{r^2 - 6r} = 1$$

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

$$9) \frac{5k^2 + 14k + 8}{k^2 + 6k} + \frac{k - 2}{k^2 + 6k} = \frac{5k - 5}{k}$$

$$10) \frac{2}{n^2 - 3n - 4} + 1 = \frac{n + 4}{n + 1}$$

$$11) \frac{5}{x - 4} = \frac{x + 5}{x + 1} + \frac{4}{x^2 - 3x - 4}$$

$$12) 1 + \frac{1}{x} = \frac{1}{x + 4}$$

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$\left\{\frac{22}{3}\right\}$

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$\left\{\frac{1}{3}\right\}$

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$\{4, -10\}$

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$$\left\{ \frac{18}{5} \right\}$$

$$10) \frac{2}{n^2 - 3n - 4} + 1 = \frac{n + 4}{n + 1} \left\{ \frac{14}{3} \right\}$$

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$$\{7, -3\}$$

$$12) 1 + \frac{1}{x} = \frac{1}{x + 4}$$

$$\{-2\}$$