

## Solving Rational Equations

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

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

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

$$3) \frac{5}{2p^2} = \frac{1}{p^2} + \frac{5}{2p}$$

$$4) \frac{1}{n^2 + 11n + 30} - \frac{n-5}{n^2 + 11n + 30} = \frac{1}{n+5}$$

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

$$6) \frac{v^2 - 16}{v^2 + 16v + 64} = \frac{v^2 - 3v - 10}{v^2 + 16v + 64} + \frac{2}{v + 8}$$

$$7) \frac{1}{x^2 + x} = \frac{x^2 + 9x + 18}{x^3 + 9x^2 + 8x} - \frac{x - 3}{x^2 + x}$$

$$8) \frac{b^2 + 7b + 10}{b^3 + 6b^2} = \frac{1}{b + 6} + \frac{5b - 20}{b^3 + 6b^2}$$

## Answers to Solving Rational Equations

1)  $\left\{\frac{1}{5}\right\}$

5)  $\{2\}$

2)  $\left\{-\frac{3}{4}\right\}$

6)  $\{22\}$

3)  $\left\{\frac{3}{5}\right\}$

7)  $\left\{-\frac{34}{3}\right\}$

4)  $\{0\}$

8)  $\{-15\}$