

Solving Rational Equations 1

Solve each equation. Remember to check for extraneous solutions.

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

$\{11\}$

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

$\{-3\}$

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

$\{-2\}$

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

$\{1\}$

$$5) \frac{3n+15}{4n^2} = \frac{1}{n^2} - \frac{n-3}{4n^2}$$

$\{-2\}$

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

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

$$7) \frac{x-6}{x} = \frac{x+4}{x} + 1$$

$\{-10\}$

$$8) \frac{1}{2n} + \frac{1}{4n^2} = \frac{1}{4n}$$

$\{-1\}$

$$9) \frac{6b+18}{b^2} + \frac{1}{b} = \frac{3}{b}$$

$\left\{-\frac{9}{2}\right\}$

$$10) \frac{1}{2x} - \frac{x-1}{2x^2} = \frac{3}{x}$$

$\left\{\frac{1}{6}\right\}$

$$11) \frac{1}{b^2 - 7b + 10} + \frac{1}{b - 2} = \frac{2}{b^2 - 7b + 10}$$

{6}

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

{2}

$$13) \frac{6}{p} = \frac{1}{p - 5} - \frac{p + 4}{p^2 - 5p}$$

{ $\frac{13}{3}$ }

$$14) \frac{5x - 20}{x^2 - 9x + 18} + \frac{1}{x - 6} = \frac{x - 4}{x^2 - 9x + 18}$$

{ $\frac{19}{5}$ }

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

{ $-\frac{5}{6}$ }

$$16) \frac{6}{n^2 - 6n + 8} = \frac{1}{n^2 - 6n + 8} - \frac{1}{n - 4}$$

{-3}

$$17) \frac{4}{a} = \frac{1}{a^2 + 4a} - \frac{a + 3}{a^2 + 4a}$$

{ $-\frac{18}{5}$ }

$$18) \frac{3}{k^2 + 5k + 6} - \frac{k - 6}{k^2 + 5k + 6} = \frac{1}{k + 3}$$

{ $\frac{7}{2}$ }

$$19) \frac{v - 3}{v^2 + 3v} = \frac{1}{v + 3} - \frac{v - 5}{v^2 + 3v}$$

{8}

$$20) 1 = \frac{3}{m + 3} + \frac{3m}{m + 3}$$

{0}