

## Solving Rational Equations

Solve each equation.

$$1) \frac{a+1}{5a} - \frac{1}{a} = 1$$

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

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

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

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

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

$$7) \frac{6}{k} - \frac{1}{k^2+6k} = \frac{1}{k}$$

$$8) \frac{4}{n+1} + \frac{1}{n^2-5n-6} = \frac{1}{n-6}$$

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

$$10) \frac{5}{p+6} - \frac{1}{p^2+6p} = \frac{2}{p^2+6p}$$

$$11) \frac{1}{2v} = \frac{5v+15}{v^2-6v} - \frac{v+6}{2v^2-12v}$$

$$12) \frac{5}{x+1} = \frac{6}{x^2-2x-3} + \frac{1}{x-3}$$

$$13) \frac{n^2+7n+6}{n^2} = \frac{1}{6} - \frac{1}{6n^2}$$

$$14) \frac{k+1}{k} = 1 - \frac{k^2-3k-4}{4k}$$

$$15) 1 = \frac{2}{r^2} - \frac{1}{r}$$

$$16) \frac{2n^2-8n-10}{5n} - 1 = \frac{n+6}{5n}$$

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

$$18) 1 = \frac{n-2}{n-1} + \frac{3}{n^2+3n-4}$$

$$19) \frac{v-6}{2v^2+2v-4} + \frac{v}{2v-2} = \frac{1}{2}$$

$$20) \frac{x-3}{2x+10} + 2x-12 = \frac{x^2+3x-18}{2x+10}$$

## Answers to Solving Rational Equations

1)  $\{-1\}$

2)  $\left\{\frac{5}{6}\right\}$

3)  $\left\{\frac{1}{2}\right\}$

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

5)  $\{-3\}$

6)  $\left\{-\frac{5}{4}\right\}$

7)  $\left\{-\frac{29}{5}\right\}$

8)  $\{8\}$

9)  $\{5\}$

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

11)  $\left\{-\frac{15}{4}\right\}$

12)  $\left\{\frac{11}{2}\right\}$

13)  $\left\{-1, -\frac{37}{5}\right\}$

14)  $\{3\}$

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

16)  $\{-1, 8\}$

17)  $\{-5\}$

18)  $\{-1\}$

19)  $\{2\}$

20)  $\{7\}$