

Unit 5.7 Solve Equations with Rational Expressions Practice

Period _____

Solve each equation. Remember to check for extraneous solutions.

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

 $\{-8\}$

2) $\frac{5}{3} + \frac{1}{3} = \frac{b-1}{3b}$

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

3) $\frac{v+3}{v} + \frac{1}{6v} = \frac{1}{v}$

 $\left\{-\frac{13}{6}\right\}$

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

 $\{-1\}$

5) $\frac{3}{b} = \frac{5b-30}{b} + \frac{1}{b}$

 $\left\{\frac{32}{5}\right\}$

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

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

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

 $\{-1\}$

8) $n + \frac{n-3}{n} = \frac{1}{2}$

 $\left\{\frac{3}{2}, -2\right\}$

9) $\frac{b+2}{b} = \frac{b^2 - 2b - 24}{3b} + \frac{2b+2}{3b}$

 $\{7, -4\}$

10) $\frac{k^2 - 25}{3k} = \frac{k}{3} - \frac{k-1}{k}$

 $\left\{\frac{28}{3}\right\}$

$$11) \frac{2}{a^2 + a - 20} = \frac{6}{a - 4} - \frac{1}{a^2 + a - 20}$$

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

$$12) \frac{1}{k} + \frac{1}{k+5} = \frac{3}{k}$$

$$\{-10\}$$

$$13) \frac{6}{k^2 - 2k} - \frac{4}{k} = \frac{1}{k-2}$$

$$\left\{ \frac{14}{5} \right\}$$

$$14) 1 + \frac{n+3}{n-2} = \frac{n-3}{n-2}$$

$$\{-4\}$$

$$15) \frac{1}{2k} = 1 - \frac{3}{k}$$

$$\left\{ \frac{7}{2} \right\}$$

$$16) 1 + \frac{x^2 - 2x - 3}{x^2 - 5x} = \frac{6}{x^2 - 5x}$$

$$\left\{ \frac{9}{2}, -1 \right\}$$

$$17) n + 4 = \frac{n+3}{5n} + \frac{1}{5n}$$

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

$$18) \frac{x-6}{3} = \frac{x^2 - 4x}{3x+9} + \frac{1}{3x+9}$$

$$\{19\}$$

$$19) \frac{r-4}{3r} + \frac{5r^2 - 35r + 60}{3r} = 5r - 20$$

$$\left\{ 4, -\frac{7}{5} \right\}$$

$$20) \frac{r+4}{3r-12} = \frac{r+1}{r^2-16} + \frac{r}{3r-12}$$

$$\{-13\}$$