Solving Rational Equations

Date_____ Period____

Solve each equation. Remember to check for extraneous solutions.

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

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

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

4) $\frac{b+6}{4b^2} + \frac{3}{2b^2} = \frac{b+4}{2b^2}$

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

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

7) $\frac{1}{v} + \frac{3v+12}{v^2-5v} = \frac{7v-56}{v^2-5v}$

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

9) $\frac{1}{n-8} - 1 = \frac{7}{n-8}$

10) $\frac{1}{r-2} + \frac{1}{r^2-7r+10} = \frac{6}{r-2}$

11) $1 = \frac{v+2}{v-4} + \frac{7v-42}{v-4}$

12) $\frac{r-4}{5r} = \frac{1}{5r} + 1$

13) $1 + \frac{x^2-5x-24}{3x} = \frac{x-6}{3x}$

14) $1 = \frac{1}{x^2+2x} + \frac{x-1}{x}$

15) $\frac{n+5}{n+8} = 1 + \frac{6}{n+1}$

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

17) $\frac{1}{x^2-5x} = \frac{x+7}{x} - 1$

18) $\frac{a-2}{a+3} - 1 = \frac{3}{a+2}$

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

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

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Date_____ Period____

Solve each equation. Remember to check for extraneous solutions.

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

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

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

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

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

$\{5\}$

4) $\frac{b+6}{4b^2} + \frac{3}{2b^2} = \frac{b+4}{2b^2}$

$\{4\}$

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

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

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

$\{-2\}$

7) $\frac{1}{v} + \frac{3v+12}{v^2-5v} = \frac{7v-56}{v^2-5v}$

$\{21\}$

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

$\{5\}$

9) $\frac{1}{n-8} - 1 = \frac{7}{n-8}$

$\{2\}$

10) $\frac{1}{r-2} + \frac{1}{r^2-7r+10} = \frac{6}{r-2}$

$\left\{\frac{26}{5}\right\}$

11) $1 = \frac{v+2}{v-4} + \frac{7v-42}{v-4}$

$\left\{\frac{36}{7}\right\}$

12) $\frac{r-4}{5r} = \frac{1}{5r} + 1$

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

13) $1 + \frac{x^2-5x-24}{3x} = \frac{x-6}{3x}$

$\{-3, 6\}$

14) $1 = \frac{1}{x^2+2x} + \frac{x-1}{x}$

$\{-1\}$

15) $\frac{n+5}{n+8} = 1 + \frac{6}{n+1}$

$\left\{-\frac{17}{3}\right\}$

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

$\{4, -1\}$

17) $\frac{1}{x^2-5x} = \frac{x+7}{x} - 1$

$\left\{\frac{36}{7}\right\}$

18) $\frac{a-2}{a+3} - 1 = \frac{3}{a+2}$

$\left\{-\frac{19}{8}\right\}$

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

$\{4, 1\}$

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

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