Name_____

Solving Rational Equations 1

Date_____ Period_____

Solve each equation. Remember to check for extraneous solutions.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Solve each equation. Remember to check for extraneous solutions.

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

$\{11\}$

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

$\{-3\}$

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

$\{-2\}$

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

$\{1\}$

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

$\{-2\}$

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

$\{-\dfrac{5}{3}\}$

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

$\{-10\}$

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

$\{-1\}$

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

$\{-\dfrac{9}{2}\}$

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

$\{\dfrac{1}{6}\}$

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

$\{6\}$

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

$\{2\}$

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

$\left\{\dfrac{13}{3}\right\}$

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

$\left\{\dfrac{19}{5}\right\}$

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

$\left\{-\dfrac{5}{6}\right\}$

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

$\{-3\}$

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

$\left\{-\dfrac{18}{5}\right\}$

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

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

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

$\{8\}$

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

$\{0\}$