Math 3

Name_____ ID: 1

Rational Exp/Equation review

Date_____ Period_____

Simplify each and state the excluded values.

1) $\dfrac{8p^2 + 56p}{p+1} \cdot \dfrac{p+1}{p+7}$

2) $\dfrac{m+4}{m^2 - m - 6} \div \dfrac{1}{m+2}$

Simplify each expression.

3) $\dfrac{3}{2b} - \dfrac{6b-5}{3b^2 - 15b}$

4) $\dfrac{4x}{3} - \dfrac{x+5}{3x-18}$

Solve each equation. Remember to check for extraneous solutions.

5) $1 - \dfrac{6}{x} = \dfrac{x+5}{5x}$

6) $\dfrac{5}{3} = \dfrac{k-3}{k} - \dfrac{4}{3k}$

7) $\dfrac{6}{4x+5} - \dfrac{1}{4x^2 + 9x + 5} = \dfrac{3}{4x^2 + 9x + 5}$

8) $\dfrac{1}{a^2 + 2a} - \dfrac{a-2}{a^2 + 2a} = \dfrac{1}{a}$

9) $\dfrac{1}{a-4} + 1 = \dfrac{5}{a-4}$

10) $\dfrac{2}{k^2 - 6k + 9} - \dfrac{1}{k-3} = \dfrac{3}{k^2 - 6k + 9}$

11) $\dfrac{5r+5}{r+5} = \dfrac{4r^2 + 20r - 24}{r^2 + 7r + 10} + \dfrac{r^2 - 7r + 6}{r^2 + 7r + 10}$

12) $\dfrac{1}{a} = \dfrac{a-5}{a-4} + \dfrac{1}{a-4}$

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Simplify each and state the excluded values.

1) $\dfrac{8p^2 + 56p}{p+1} \cdot \dfrac{p+1}{p+7}$

$8p; \{-1, -7\}$

2) $\dfrac{m+4}{m^2 - m - 6} \div \dfrac{1}{m+2}$ $\dfrac{m+4}{m-3}; \{3, -2\}$

Simplify each expression.

3) $\dfrac{3}{2b} - \dfrac{6b-5}{3b^2 - 15b}$

$\dfrac{-3b - 35}{6b(b-5)}$

4) $\dfrac{4x}{3} - \dfrac{x+5}{3x - 18}$

$\dfrac{4x^2 - 25x - 5}{3(x-6)}$

Solve each equation. Remember to check for extraneous solutions.

5) $1 - \dfrac{6}{x} = \dfrac{x+5}{5x}$ $\left\{\dfrac{35}{4}\right\}$

6) $\dfrac{5}{3} = \dfrac{k-3}{k} - \dfrac{4}{3k}$ $\left\{-\dfrac{13}{2}\right\}$

7) $\dfrac{6}{4x+5} - \dfrac{1}{4x^2 + 9x + 5} = \dfrac{3}{4x^2 + 9x + 5}$ $\left\{-\dfrac{1}{3}\right\}$

8) $\dfrac{1}{a^2 + 2a} - \dfrac{a-2}{a^2 + 2a} = \dfrac{1}{a}$ $\left\{\dfrac{1}{2}\right\}$

9) $\dfrac{1}{a-4} + 1 = \dfrac{5}{a-4}$

$\{8\}$

10) $\dfrac{2}{k^2 - 6k + 9} - \dfrac{1}{k-3} = \dfrac{3}{k^2 - 6k + 9}$

$\{2\}$

11) $\dfrac{5r+5}{r+5} = \dfrac{4r^2 + 20r - 24}{r^2 + 7r + 10} + \dfrac{r^2 - 7r + 6}{r^2 + 7r + 10}$

$\{-14\}$

12) $\dfrac{1}{a} = \dfrac{a-5}{a-4} + \dfrac{1}{a-4}$

$\{1\}$