

Review for Rational Expressions & Equations Test

Date _____ Period _____

Simplify each expression.

1) $\frac{r^2 + 16r + 60}{r + 10}$

2) $\frac{m - 6}{m^2 - 9m + 18}$

3) $\frac{8(k+9)}{k+9} \cdot \frac{4k^2}{4k^2(k-9)}$

4) $\frac{m - 10}{(m - 9)(m - 10)} \cdot \frac{(m - 7)(m + 2)}{m + 2}$

5) $\frac{10x^2}{10x^2(x+4)} \cdot \frac{6x^2(x-6)}{x-6}$

6) $\frac{8p(p-1)}{5(p-1)} \cdot \frac{5}{p-9}$

7) $\frac{n^2 + 4n + 3}{9n^2} \cdot \frac{1}{n+3}$

8) $\frac{k+2}{k^2 + 11k + 18} \cdot \frac{k^2 + 16k + 63}{4}$

9) $\frac{x+1}{x-4} \div \frac{2(x+1)}{7(x-4)}$

10) $\frac{x+6}{x-7} \div \frac{(x+8)(x-5)}{(x-5)(x-7)}$

$$11) \frac{5}{(x+3)(x-5)} - \frac{2}{(x+3)(x-5)}$$

$$12) \frac{4v}{(v+4)(v-3)} + \frac{v+1}{(v+4)(v-3)}$$

$$13) \frac{x+3}{12x(x+3)} + \frac{x-6}{12x(x+3)}$$

$$14) \frac{m+2}{4m(m-2)} + \frac{4}{4m(m-2)}$$

Solve each equation. Remember to check for extraneous solutions.

$$15) \frac{1}{2} + \frac{1}{n} = \frac{1}{2n}$$

$$16) \frac{2}{x^2} = \frac{1}{x^2} + \frac{1}{x}$$

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

$$18) \frac{1}{x^2} = \frac{6}{x^2} + \frac{1}{x}$$

$$19) \frac{1}{5m} + \frac{1}{5m^2} = \frac{4}{5m}$$

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

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Simplify each expression.

1) $\frac{r^2 + 16r + 60}{r + 10}$

$r + 6$

2) $\frac{m - 6}{m^2 - 9m + 18}$

$\frac{1}{m - 3}$

3) $\frac{8(k+9)}{k+9} \cdot \frac{4k^2}{4k^2(k-9)}$

$\frac{8}{k-9}$

4) $\frac{m-10}{(m-9)(m-10)} \cdot \frac{(m-7)(m+2)}{m+2}$

$\frac{m-7}{m-9}$

5) $\frac{10x^2}{10x^2(x+4)} \cdot \frac{6x^2(x-6)}{x-6}$

$\frac{6x^2}{x+4}$

6) $\frac{8p(p-1)}{5(p-1)} \cdot \frac{5}{p-9}$

$\frac{8p}{p-9}$

7) $\frac{n^2 + 4n + 3}{9n^2} \cdot \frac{1}{n+3}$

$\frac{n+1}{9n^2}$

8) $\frac{k+2}{k^2 + 11k + 18} \cdot \frac{k^2 + 16k + 63}{4}$

$\frac{k+7}{4}$

9) $\frac{x+1}{x-4} \div \frac{2(x+1)}{7(x-4)}$

$\frac{7}{2}$

10) $\frac{x+6}{x-7} \div \frac{(x+8)(x-5)}{(x-5)(x-7)}$

$\frac{x+6}{x+8}$

$$11) \frac{5}{(x+3)(x-5)} - \frac{2}{(x+3)(x-5)}$$

$$\frac{3}{x^2 - 2x - 15}$$

$$12) \frac{4v}{(v+4)(v-3)} + \frac{v+1}{(v+4)(v-3)}$$

$$\frac{5v+1}{v^2 + v - 12}$$

$$13) \frac{x+3}{12x(x+3)} + \frac{x-6}{12x(x+3)}$$

$$\frac{2x-3}{12x^2 + 36x}$$

$$14) \frac{m+2}{4m(m-2)} + \frac{4}{4m(m-2)}$$

$$\frac{m+6}{4m^2 - 8m}$$

Solve each equation. Remember to check for extraneous solutions.

$$15) \frac{1}{2} + \frac{1}{n} = \frac{1}{2n}$$

$$\{-1\}$$

$$16) \frac{2}{x^2} = \frac{1}{x^2} + \frac{1}{x}$$

$$\{1\}$$

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

$$\{2\}$$

$$18) \frac{1}{x^2} = \frac{6}{x^2} + \frac{1}{x}$$

$$\{-5\}$$

$$19) \frac{1}{5m} + \frac{1}{5m^2} = \frac{4}{5m}$$

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

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

$$\{5\}$$