

Lesson 8.4 Worksheet

Name: _____

Simplify the rational expression, if possible.

1.) $\frac{4x^2}{20x^2 - 12x}$

2.) $\frac{(x+7)(x+9)}{(x-9)(x+7)}$

3.) $\frac{4}{x(x+2)}$

4.) $\frac{x^2 - 11x + 24}{x^2 - 3x - 40}$

5.) $\frac{x^2 - 36}{x^2 + 12x + 36}$

6.) $\frac{x-4}{x^3 - 64}$

Multiply the expressions. Simplify the result.

7.) $\frac{48x^5y^3}{y^4} \cdot \frac{x^2y}{6x^3y^2}$

8.) $\frac{5x(x-2)}{(x+1)(x-6)} \cdot \frac{x+1}{10(x-2)(x-1)}$

9.) $\frac{3x-12}{x+5} \cdot \frac{x+6}{2x-8}$

10.) $\frac{x^2+3x-4}{x^2+4x+4} \cdot \frac{2x^2+4x}{x^2-4x+3}$

$$11.) \frac{x^2 - 3x - 10}{x^2 - 2x - 15} \cdot (x^2 + 10x + 21)$$

$$12.) \frac{x^3 - 9x}{x^2 + 6x + 9} \cdot \frac{x^3 + 3x^2}{x - 3}$$

Divide the expressions. Simplify the result.

$$13.) \frac{8x^2y^2z}{xz^3} \div \frac{10xy}{x^4z}$$

$$14.) \frac{(x+3)(x-2)}{x(x+1)} \div \frac{x+3}{x}$$

$$15.) \frac{x^2 - 6x - 27}{2x^2 + 2x} \div \frac{x^2 - 14x + 45}{x^2}$$

$$16.) \frac{x^2 - 4x - 5}{x + 5} \div (x^2 + 6x + 5)$$

$$17.) \frac{3x^2 + 13x + 4}{x^2 - 4} \div \frac{4x + 16}{x + 2}$$

$$18.) \frac{x^2 - x - 2}{x^2 + 4x - 5} \div \frac{x - 2}{5x + 25}$$