

Learning Activity – Section 4.1 – Multiplication and Division of Rational Expressions

Names: _____

Determine the restrictions on the variable for each expression.

1. $\frac{x-8}{12x+28}$

2. $\frac{-9x}{x^2-4x-21}$

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

4. $\frac{44}{x^2+100}$

Simplify the rational expressions.

5. $\frac{3x^2-7x+2}{x^2-4x+4}$

6. $\frac{24ab^4c^3}{20a^2bc^3}$

Multiply the rational expressions.

$$7. \frac{16x^2}{36x^2-1} \cdot \frac{42x-7}{14x^3}$$

$$8. \frac{x^2-100}{x^2+10x} \cdot \frac{3x^2}{18x-9}$$

Divide the rational expressions.

$$9. \frac{45x^4}{3x+6} \div 75x^3 \quad \left(\text{Hint: } n = \frac{n}{1} \right)$$

$$10. \frac{10x-8}{x+2} \div \frac{25x^2-16}{2x-4}$$