

Module 2 – Rational Expressions
Lesson 2 – Multiplication and Division of Rational Expressions
Homework 1

Name _____

Find all solutions for each section. Show all work.

Multiply and divide the following rational expressions then simplify.

1. $\frac{3x^2+6x}{15x^3-12x^2} \cdot \frac{16x^2}{4x+8}$

2. $\frac{x^2-3x-18}{12x^3} \cdot \frac{9x^2}{x^2-36}$

3. $\frac{x^3+8}{x^2-3x-10} \cdot \frac{x^2-25}{x^2-2x+4}$

4. $\frac{x^3-1}{x^2+x} \div \frac{2x^2+2x+2}{x^2-1}$

5. $\frac{5x^2+10x}{10x^2} \div \frac{x^2+5x+6}{x^2-9}$

$$6. \frac{x-2y}{18x} \cdot \frac{27x^2}{x-2y}$$

$$7. \frac{8x-16}{6x^3} \div \frac{x^2-4}{24x}$$

$$8. \frac{4x-8y}{2y^3} \div \frac{x^2-4xy+4y^2}{12y^2}$$

$$9. \frac{y^2+y-2}{1-y^2} \cdot \frac{6y^3}{y^2+y} \div \frac{3y+6}{y+1}$$

$$10. \frac{3}{x+5} \div \frac{2x^2+x-3}{x^2-3x-40} \cdot \frac{4x^2-9}{3x-24}$$