Name: _Rosendo Felix_   Math 1010 Guided Notes

Module: ___3___   H.W. Number: ___3.3___   Textbook Section: ___6.2___

A. Take notes while reading the textbook or watching the lecture videos. Write out any definitions, formulas, properties, or procedure steps.

Rule for Multiplying Rational Expressions:

- the product of the rational expressions $\frac{P}{a}$ and $\frac{B}{s}$ is defined as follows. $\frac{P}{a} \cdot \frac{B}{s} = \frac{PB}{as}$

- that is to multiply rational expressions, multiply the numerators and the denominators.

Rule for Dividing Rational Expressions:

- if $\frac{P}{a}$ and $\frac{B}{s}$ are any two rational expressions where $\frac{B}{s} \neq 0$ then their quotient is defined as follows. $\frac{P}{a} \div \frac{B}{s} = \frac{P}{a} \cdot \frac{s}{B} = \frac{Ps}{aB}$

- that is. to divide one rational expression by another, multiply the first rational expression dividend by the reciprocal of the second.

Reminders/Cautions:
When you multiply and divide rational expressions, you **DON'T need the denominators to be the same. (NO LCD is needed)**
Multiplying and Dividing Rational Expressions has nothing to do with "Cross Multiplication"

B. Write out each learning OBJECTIVE word for word. Write one example demonstrating that objective.

OBJECTIVE 1: multiply rational expressions

EXAMPLE

$$\frac{3}{10} \cdot \frac{5}{9} =$$

$$\frac{3 \cdot 5}{10 \cdot 9} =$$

$$\frac{3 \cdot 5}{2 \cdot 5 \cdot 3 \cdot 3} =$$

$$\boxed{\frac{1}{6}}$$

$$\frac{6}{x} \cdot \frac{x^2}{12} =$$

$$\frac{6 \cdot x^2}{x \cdot 12} =$$

$$\frac{6 \cdot x \cdot x}{x \cdot 2 \cdot 6} =$$

$$\boxed{\frac{x}{2}}$$

OBJECTIVE 2: divide rational expressions

EXAMPLE

$$\frac{7}{8} \div \frac{1}{4} =$$

$$\frac{7}{8} \cdot \frac{4}{1}$$