Name: Rosendo Felix Math 1010 Guided Notes

Module: 3 H.W. Number: 3.4 Textbook Section: 6.4

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

Rules for Adding and Subtracting Rational Expressions:

Adding- find the LCD

- write each rational expression as an equivalent rational expression with the LCD as Denominator
- Add the numerators to obtain the numerator of the sum. the LCD is the Denominator of the sum
- write in lowest terms

subtracting- $\frac{P}{Q} - \frac{R}{Q} = \frac{P-R}{Q}$

Reminders/Cautions:

sign errors often occur in subtraction problems. Be sure to use Parenthesis after the subtraction symbol.

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

OBJECTIVE 1: Add rational expressions having the same denominator

EXAMPLE

$\frac{4}{9} + \frac{2}{9} =$

$\frac{4+2}{9} =$

$\frac{6}{9} = \frac{2}{3}$

$\frac{3x}{x+1} + \frac{3}{x+1}$

$\frac{3x+3}{x+1}$

$\frac{3(x+1)}{x+1}$

(3)

OBJECTIVE 2: Add rational expressions having different denominators

EXAMPLE

$\frac{1}{12} + \frac{7}{15} = \frac{1}{12} \cdot \frac{5}{5} + \frac{7}{15} \cdot \frac{5}{5}$

$\frac{5}{60} + \frac{28}{60} = \frac{5+28}{60}$

$\frac{33}{60} = \frac{11}{20}$

OBJECTIVE 3: Subtract rational expressions.

EXAMPLE

$$\frac{2m}{m-1} - \frac{m+3}{m-1} = \frac{2m-(m+3)}{m-1} =$$

$$= \frac{2m-m-3}{m-1}$$

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

$$\frac{9}{x-2} - \frac{3}{x} = \frac{9x}{x(x-2)} - \frac{3(x-2)}{x(x-2)} =$$

$$\frac{9x-3(x-2)}{x(x-2)} = \frac{9x-3x+6}{x(x-2)} =$$

$$\frac{6x+6}{x(x-2)} = \frac{6(x+1)}{x(x-2)}$$