Name: _____ Date: _____ **Unit 1 Class Work**

Operations with Rational Numbers Class Work

You will be able to… add, subtract, multiply, and divide rational numbers (in particular, fractions) and model real world situations involving such operations.

★ **Consider This…** You and a friend are sharing a candy bar. You eat ½ of the candy bar, and your friend eats a third of the candy bar. In total, how much do you and your friend eat? Convince me that you are correct! Feel free to use the rectangle below to represent the whole candy bar.

*What was important in solving this problem?

★ **Now Consider This…** Eddie and Mary are sharing a candy bar. Eddie eats ¼ of the candy bar, and Mary eats 2/3 of the candy bar. Who ate less candy, and specifically how much less? Convince me that you are correct! Feel free to use the rectangle below to represent the whole candy bar.

*What was important in solving this problem?

Adding & Subtracting Fractions

★ First, _____.

★ Then, _____.

Example: Simplify $\frac{3}{4}+\frac{1}{2}-\frac{1}{8}$

Now You Try Some! 1. Simplify each expression.

a. $\frac{3}{8}+\frac{1}{2}$ b. $\frac{2}{5}+\frac{3}{10}-\frac{1}{2}$ c. $\frac{11}{12}-\frac{7}{8}$

d. $1\frac{2}{5}+\frac{1}{4}-\frac{2}{3}$ e. $b-c$ f. $d+f$

$b=2\frac{2}{7}, c=\frac{1}{7}$ $d=-\frac{2}{3}, f=\frac{5}{11}$

convert mixed # to a fraction first

replace variables with #s first.

2. a. Your goal is to complete 2½ miles of cardio at the gym today. If you ran for ¾ of a mile and cycled two-thirds of a mile, how many more miles of cardio do you need to complete?

b. You also completed half a mile on the elliptical! How much more do you have left now?

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Multiplying Fractions

★ **When multiplying fractions, simply** _____

_____

_____.

Example: Simplify $\frac{1}{4} * \frac{1}{2} * -\frac{5}{6}$

Now You Try Some! 1. Simplify each expression.

a. $\frac{2}{3} * \frac{1}{9}$ b. $\frac{1}{2} * \frac{2}{7} * -\frac{1}{5}$ c. $1\frac{11}{13} * \frac{2}{3}$

d. $\frac{1}{2} * \frac{2}{5} + \frac{3}{4} * \frac{2}{3}$ e. bc $b = 2\frac{2}{7}, c = \frac{1}{2}$ f. $fd + \frac{1}{2} * \frac{1}{4}$ $d = -\frac{1}{2}, f = \frac{5}{8}$

2. Sasha runs ¾ of a mile every nine minutes. How far can Sasha run in 36 minutes, assuming she maintains a steady pace? Explain.

3. A recipe for cheesecake requires 2¾ cups of crushed graham crackers. If you plan on making four cheesecakes to donate to a coup kitchen, how many cups of crushed graham crackers will you need? Justify your response.

Dividing Fractions

★ **When dividing fractions, use the KFC rule (** _____**),**

then _____

Example: Simplify $\frac{9}{10} \div \frac{1}{2}$

Now You Try Some! 3. Simplify each expression.

a. $\frac{3}{4} \div \frac{1}{7}$ b. $\frac{8}{9} \div 2$ c. $3 \div \frac{2}{5}$

d. $\frac{\frac{4}{5}}{8}$ e. $2\frac{1}{2} \div \frac{3}{4}$ f. $\frac{6}{7} \div \frac{1}{4}$

4. A pancake recipe for 24 pancakes requires 1 ½ cup of flour. You only want to make 8 pancakes. How much flour should you use? Justify your response.

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Exit Problems Day 1:

½ + ¾ = _____ $\frac{5}{6} - \frac{1}{7} =$ _____

Is there anything you are still wondering about regarding the fraction operations you worked with today?

Exit Problems Day 2:

½ * ¾ = _____ $\frac{3}{5} \div \frac{2}{7} =$ _____

Is there anything you are still wondering about regarding the fraction operations you worked with today?