Name _____ MATH 3161 Date _____

Dividing, Comparing, and Ordering Rational Numbers

1. Reviewed the Original DCO Worksheet and Answer Key ☐ yes ☐ no

2. In the space below, write a story using what you know about the division of whole numbers and integers to go with the equation: $\frac{5}{8} \div \frac{1}{2} = n$.

3. If $7\frac{1}{2}$ yards of fabric are enough to cover $\frac{3}{4}$ of Amanda's bedroom wall, how much fabric is needed to cover the whole wall? Draw a picture to model this problem and determine the answer.

4. Find some counter examples to show that division of rational numbers is not commutative or associative.
   a. b.

5. Use each of the methods that follow to find the quotient for $\frac{3}{7} \div \frac{2}{5}$. Show all work.
   a. **multiplying by the reciprocal method** b. **common denominator method**

   c. **complex fraction method** d. **missing factor method**

6. Find the quotient for each of the following using the procedure for dividing rational numbers in decimal form and **verify** your answers.
   a. **0.3245 ÷ 0.005** b. **1.4 ÷ 0.05**

c. **– 0.011 ÷ 4**

d. **15.21 ÷ 5.78**

7. Why is the ability to estimate reasonable answers important when you are dividing decimals?

8. What **estimation strategies** would you use to determine whether your **answers to question 6** are **reasonable**?

a.

b.

c.

d.

9. Verify that $\frac{4}{9} < \frac{5}{11}$ by using:

a. **estimation or models**

b. **common denominators**

c. **a calculator and place value**

d. **the definition of greater than**

10. Which **method of comparison** did you find most useful in **question 9 above**? Under what conditions might **each method** be **more useful** than the others?

11. Give three rational numbers between $\frac{7}{12}$ and $\frac{8}{12}$ in simplest form in the $\frac{a}{b}$ form.

12. Give three rational numbers between $0.\overline{7}$ and $\frac{7}{10}$ in the decimal form.

13. What **strategies** did you use to find the rational numbers in **questions 11** and **12**?

14. Convert $0.\overline{72348}$ into a fraction in simplest form.