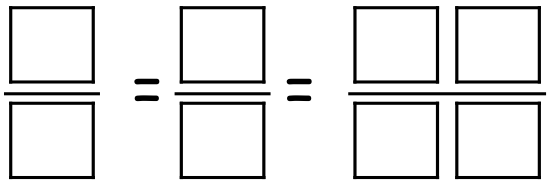
Name _____ Period _____ Date _____

7-3 ESSENTIAL SKILLS

OPEN MIDDLE PROBLEMS

For each expression, use the digits 0 – 9 no more than once each in the given boxes. Two adjacent boxes represent a two-digit number.

1. Structure:

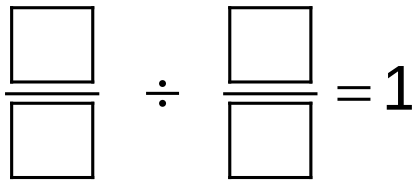


Find two different solutions that make the above structure true.

a. Solution 1:

b. Solution 2:

2. Structure:



Find two different solutions that make the above structure true.

a. Solution 1:

b. Solution 2:

c. What do you notice about the two fractions you created whose quotient is 1?

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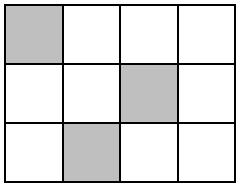
SHADY SQUARES

Use the picture to the right for problems 1 – 3.



1. Circle all ratio statements below that are true.

   a. The ratio of shaded squares to non-shaded squares is 3:12.

   b. There is one shaded square for every three non-shaded squares.

   c. The ratio of shaded squares to total number of squares is 1:4.

   Choose one statement that is not circled and explain why it's false.

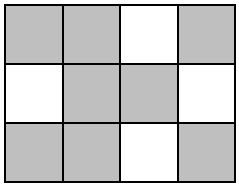
2. Julie says that $\frac{1}{4}$ of the rectangle is shaded. Kyla says that $\frac{1}{3}$ of the rectangle is shaded. Who is right? Explain using any combination of words, pictures, and numbers.

3. Tony wants to split each square in half.

   a. What should be the ratio of shaded squares to non-shaded squares for Tony's rectangle?

   b. Write three different ratios that are equivalent to Tony's ratio in part a?

4. Andrew's shaded rectangle is to the right. Circle all of the ratios below that represent the number of shaded squares to the total number of squares.



2 for every 1 2 to 3 4 for every 6 7 : 8 16 to 24 1 : 1.5

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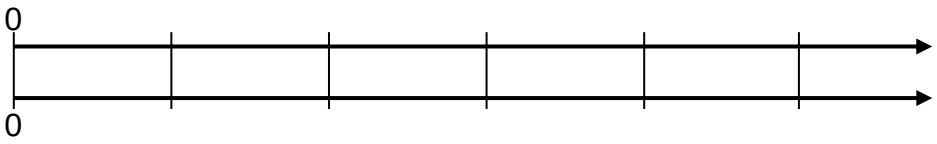
DOUBLE NUMBER LINES

Create double number lines to help solve each problem. Assume all rates are constant.

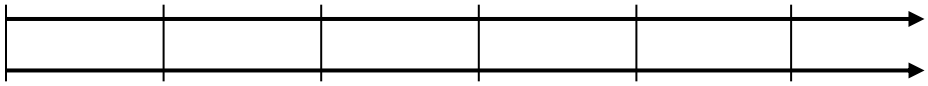
1. Charlotte pays $60 for 10 sandwiches.



   a. What is the price for 25 sandwiches at this rate?

   b. What is cost for 1 sandwich (called the unit price) at this rate?

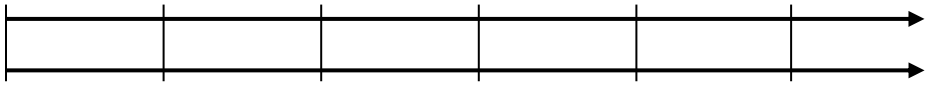
2. Sofia read 5 books in 2 weeks.



   a. At this rate, how many books will she read in 9 weeks?

   b. How many books did she read per week?

3. A workday is 8 hours. You earn $48 for one work day.



   a. What is the hourly pay rate?

   b. At this rate, how much would you earn in 5 hours?

4. Describe a general process you used to create the double number lines above.

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FOUR IN A ROW: FRACTION DIVISION

Players: 2+

Objective: Be the first player to claim 4 spaces in a row, column, or diagonal to win the game.

Materials: Board game, 2 sets of colored counters (for the game board), 2 objects (e.g. cubes, paperclips, cut up paper) that will cover numbers in Box A and Box B

Rules: Two players alternate finding the quotient by choosing a dividend from Box A and divisor from Box B. Players check the quotient (answer key provided) and, if successful, place their colored counter on a space with the appropriate quotient.

BOX A: DIVIDEND		
$\frac{1}{2}$	$\frac{2}{3}$	$\frac{3}{4}$
$\frac{1}{6}$	$\frac{4}{5}$	$\frac{3}{8}$

BOX B: DIVISOR		
$\frac{1}{3}$	$\frac{2}{5}$	$\frac{5}{6}$
$\frac{1}{4}$	$\frac{7}{8}$	$\frac{2}{3}$

GAME BOARD: DIVIDING FRACTIONS (A ÷ B)					
$\frac{9}{10}$	$\frac{15}{16}$	$2\frac{1}{4}$	2	$1\frac{1}{5}$	1
$\frac{3}{7}$	$1\frac{1}{2}$	$\frac{1}{2}$	$1\frac{7}{8}$	$2\frac{2}{5}$	$\frac{4}{7}$
$1\frac{1}{8}$	$2\frac{2}{3}$	$\frac{9}{20}$	$\frac{24}{25}$	$\frac{5}{12}$	2
$\frac{4}{5}$	$\frac{9}{16}$	$\frac{1}{4}$	$\frac{32}{35}$	$1\frac{2}{3}$	$1\frac{1}{4}$
$\frac{4}{21}$	$\frac{6}{7}$	$\frac{1}{5}$	$\frac{2}{3}$	3	$1\frac{1}{8}$
$3\frac{1}{5}$	2	$\frac{3}{4}$	$1\frac{1}{2}$	$\frac{3}{5}$	$\frac{16}{21}$