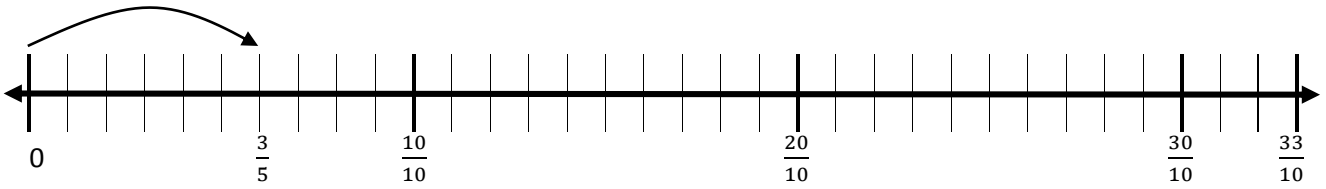
Name _____ Date _____

Make a model and record the multiplication and division equation for each situation.

1. How many $\frac{3}{5}$ portions are in $\frac{33}{10}$?

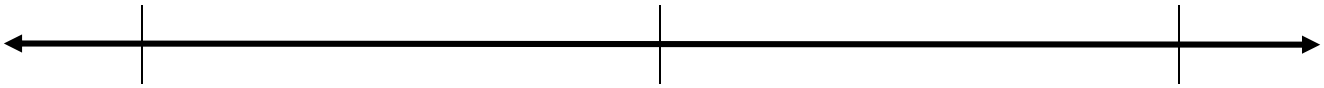


Multiplication Equation:	Division Equation:

a) Describe a real-world situation that matches the model

b) What does the fraction in the quotient represent?

2. How many $\frac{3}{8}$ portions are in $1\frac{3}{4}$?

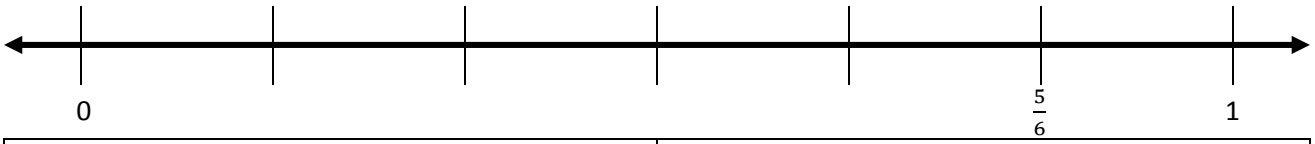


Multiplication Equation:	Division Equation:

a) Describe a real-world situation that matches the model

b) What does the fraction in the quotient represent?

3. $\frac{5}{6} \div \frac{2}{3} =$

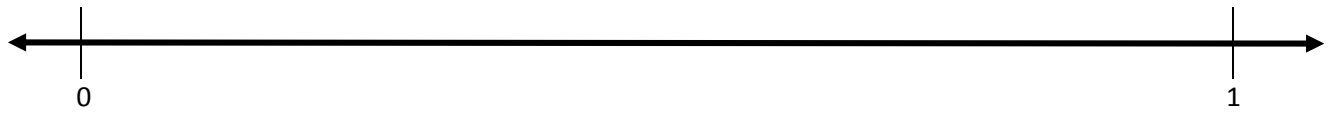


Multiplication Equation:	Division Equation:

a) Describe a real-world situation that matches the model.

b) What does the fraction in the quotient represent?

4. $\frac{2}{3} \div \frac{5}{6} =$



Multiplication Equation:	Division Equation:

a) Describe a real-world situation that matches the model.

b) What does the fraction in the quotient represent?

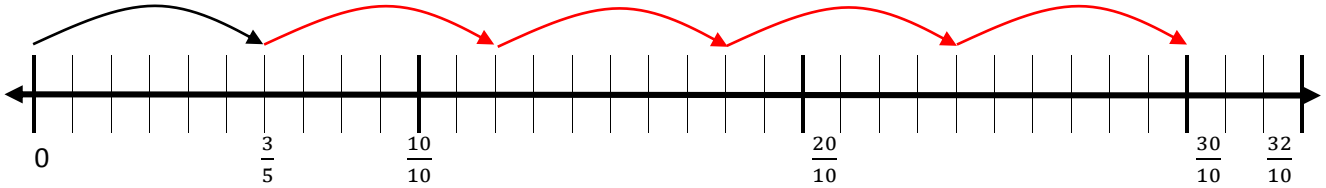
5. Compare the quotients for #3 and #4. What do you notice?

Handout 3: Division of Mixed Numbers and Fractions (Number Line Models) 6.NS.1

TEACHER NOTES

Make a model and record the multiplication and division equation for each situation.

1. How many $\frac{3}{5}$ portions are in $\frac{32}{10}$?



The line is partitioned into 32 sections. 3/5 is equivalent to 6/10. Use an arrow to show where 3/5 is located on the number line. Continue to use arrows to indicate each portion of 3/5. Since there are 5 arrows, the result is a mixed number that includes 5 whole portions and 1/3 of another portion. Both responses would be correct, as they are equivalent.

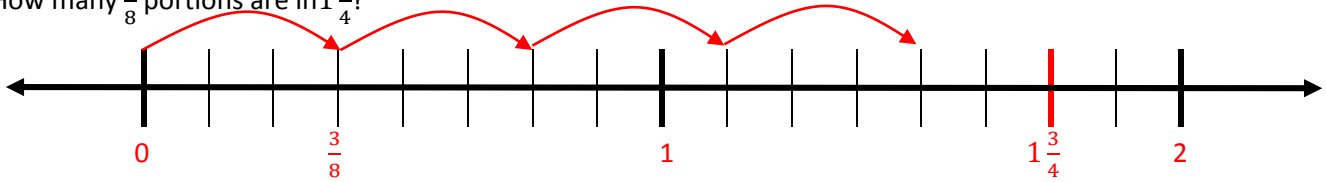
Multiplication Equation:	Division Equation:
$? \times \frac{3}{5} = \frac{33}{10}$	$\frac{33}{10} \div \frac{3}{5} = 5\frac{2}{3}$

a) Describe a real-world situation that matches the model. Answers will vary.

b) What does the fraction in the quotient represent?

If you look at the model you can see that there are 2 more tenths remaining on the number line until 32/10 is reached. It also represents that 1 of the 3 portions are shown on the number line before another whole leap of 3/5.

2. How many $\frac{3}{8}$ portions are in $1\frac{3}{4}$?



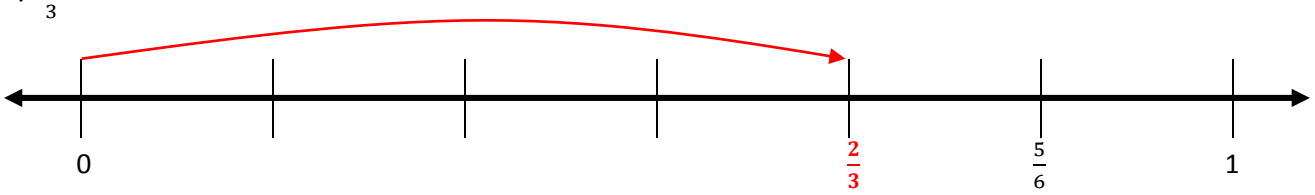
Partition the line into fourths to indicate 1 ¾ on the number line. Then partition the number line into eights. Use an arrow to indicate a portion of 3/8. Continue using arrows to indicate portions of 3/8 until you get as close to 1 ¾ as possible without passing it. There are 4 whole leaps and 2 more sections of the 3 sections needed for another leap of 3/8.

Multiplication Equation:	Division Equation:
$? \times \frac{3}{8} = 1\frac{3}{4}$	$1\frac{3}{4} \div \frac{3}{8} = 4\frac{2}{3}$

a) Describe a real-world situation that matches the model.

b) What does the fraction in the quotient represent? It represents that 2 of the 3 portions are shown on the number line before another whole leap of 3/8.

3. $\frac{5}{6} \div \frac{2}{3} =$



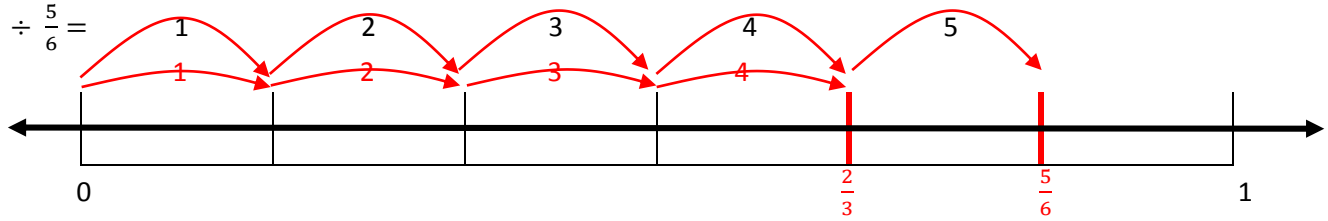
Partition the line into sixths and indicate the location of 5/6. Then make an arrow to indicate a leap of 2/3. Since 2/3 is before the 5/6 you have 1 whole leap and 1 more section of the 4 needed to make another leap of 2/3 on this number line.

Multiplication Equation:	Division Equation:
$? \times \frac{2}{3} = \frac{5}{6}$	$\frac{5}{6} \div \frac{2}{3} = 1\frac{1}{4}$

a) Describe a real-world situation that matches the model. Answers will vary.

b) What does the fraction in the quotient represent? There is 1 section of the 4 needed to make a leap of 2/3. This can be seen by counting the number of sections between the 2/3 mark and the 5/6 mark compared to the 4 sections shown by the arrow.

4. $\frac{2}{3} \div \frac{5}{6} =$



Partition the number line into thirds and note where 2/3 is located. Then partition the number line into sixths and note where 5/6 is located. 2/3 is 4 units of the 5 units needed to be at the point for 5/6. Therefore 2/3 ÷ 5/6 is 4/5.

Multiplication Equation:	Division Equation:
$? \times \frac{5}{6} = \frac{2}{3}$	$\frac{2}{3} \div \frac{5}{6} = \frac{4}{5}$

a) Describe a real-world situation that matches the model. Answers will vary.

b) What does the fraction in the quotient represent? The quotient is 4/5, which is less than 1. The 2/3 point is 4/5 of the way to the 5/6 point on the number line.

5. Compare the quotients for #3 and #4. What do you notice? The dividend is greater than the divisor in #3, and the quotient is greater than 1. In #4, the dividend is less than the divisor, and the quotient is less than 1.