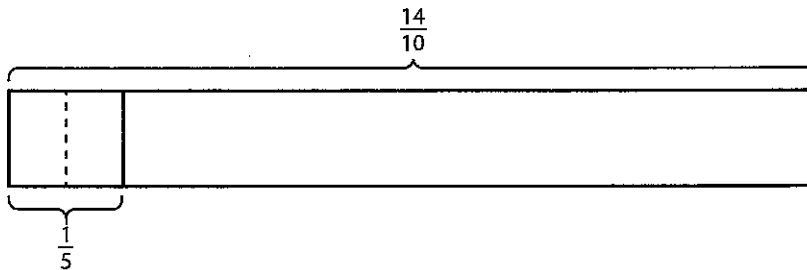


Understanding Division with Fractions

- 1 Complete the bar model to show how many $\frac{1}{5}$ s make $\frac{14}{10}$.



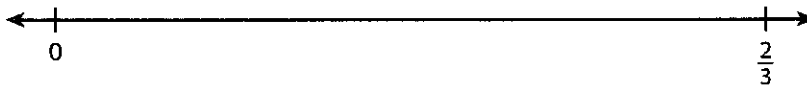
How many $\frac{1}{5}$ s make $\frac{14}{10}$? _____

Complete the equations.

$$\frac{14}{10} \div \underline{\hspace{2cm}} = 7$$

$$\underline{\hspace{2cm}} \cdot \frac{1}{5} = \frac{14}{10}$$

- 2 Use the number line to show $\frac{2}{3} \div \frac{1}{12}$.



What is the quotient? _____

- 3 Which type of model do you like better, the bar model or the number line? Explain.

Using Multiplication to Divide by a Fraction

► Write the missing digits in the boxes to make each equation true.

$$1 \quad \frac{1}{2} \div \frac{2}{3} = \frac{1}{2} \times \frac{\square}{2} = \frac{3}{\square}$$

$$2 \quad \frac{4}{5} \div \frac{1}{4} = \frac{4}{5} \times \frac{4}{\square} = \frac{\square}{\square}$$

$$3 \quad \frac{2}{5} \div \frac{3}{4} = \frac{2}{5} \times \frac{\square}{\square} = \frac{\square}{15}$$

$$4 \quad \frac{5}{6} \div \frac{5}{12} = \frac{5}{6} \times \frac{\square}{\square} = \frac{\square}{30} = 2$$

$$5 \quad \frac{3}{4} \div \frac{5}{7} = \frac{3}{4} \times \frac{\square}{\square} = \frac{\square}{\square}$$

$$6 \quad 1\frac{1}{3} \div \frac{3}{7} = \frac{\square}{3} \times \frac{7}{\square} = \frac{\square}{\square}$$

$$7 \quad 4\frac{\square}{2} \div \frac{2}{5} = \frac{9}{2} \times \frac{\square}{\square} = \frac{\square}{\square}$$

$$8 \quad 3\frac{1}{2} \div \frac{\square}{8} = \frac{7}{\square} \times \frac{8}{7} = \frac{\square}{\square} = \square$$

$$9 \quad 1\frac{2}{3} \div 2\frac{1}{4} = \frac{\square}{3} \times \frac{\square}{9} = \frac{\square}{\square}$$

$$10 \quad 3\frac{3}{5} \div 1\frac{3}{\square} = \frac{18}{\square} \times \frac{4}{7} = \frac{\square}{\square}$$

11 Write a word problem that could be solved by the equation in problem 8.

Understanding Positive and Negative Numbers

- 1 The points on the number line are opposite numbers. The tick marks represent intervals of 1 unit.



Label 0 at the correct spot on the number line.

Label the point plotted to the right of 0.

Label the point plotted to the left of 0.

- 2 Use this list of numbers to answer the following questions:

$0, 4, -2, \frac{2}{3}, -1.8, 16, 3.2, -\frac{5}{4}$

Which numbers are rational numbers that are not integers?

Of the remaining numbers, which are integers but not whole numbers?

Of the remaining numbers, which are whole numbers?

- 3 Use the following terms to complete the following statements: *integers*, *rational numbers*, and *whole numbers*. Use each term only once.

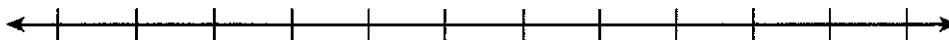
The counting numbers and zero are _____.

The counting numbers and their opposites, along with zero, are _____.

Integers and the decimal equivalents of fractions are _____.

Understanding Positive and Negative Numbers *continued*

- 4 Plot and label 4, -3 , 1, and their opposites on the number line.



- 5 If several points are graphed on a number line, is the point that is the farthest from 0 always the greatest? Explain.

Comparing Positive and Negative Numbers

► Write $<$ or $>$ to make each comparison true.

1 $7 \bigcirc 10$

2 $7 \bigcirc -10$

3 $-7 \bigcirc -10$

4 $\frac{2}{3} \bigcirc -1\frac{2}{3}$

5 $-50 \bigcirc 0.3$

6 $-12 \bigcirc -35$

7 $-5 \bigcirc 4.5$

8 $\frac{1}{2} \bigcirc -80$

9 $-\frac{1}{4} \bigcirc -1.4$

► Write each set of numbers in order from least to greatest.

10 $5, -2, -1, 4$

11 $3.4, 7, -3.5, -3$

12 $-2.1, -2, -3, 0$

13 $-\frac{3}{4}, -2, -\frac{1}{4}, 2$

14 $5, 0, -6, -0.1$

15 $7.5, -200, -1.5, -8$

16 $\frac{1}{2}, -\frac{1}{2}, -\frac{1}{3}, \frac{1}{3}$

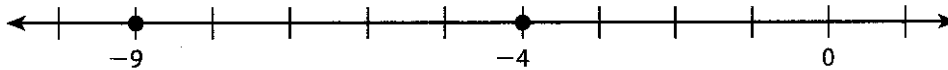
17 $1.2, -2.1, -21, 0.12$

18 $0.1, -0.2, 0.55, -0.31$

19 Describe how to determine which of two negative numbers is greater.
Give an example.

Understanding Absolute Value

- 1 Answer the questions about this number line.



Which is greater, -9 or -4 ? Explain.

Which is greater, $|-9|$ or $|-4|$? Explain.

- 2 A football team tries to move the ball forward as many yards as possible on each play, but sometimes they end up behind where they started. The distances, in yards, that a team moves on its first five plays are 2, -1 , 4, 3, and -5 . A positive number indicates moving the ball forward, and a negative number indicates moving the ball backward.

Which number in the list is the greatest?

What is a better question to ask to find out which play went the farthest from where the team started?

The coach considers any play that moves the team more than 4 yards from where they started a "big play." Which play(s) are big plays?

- 3 When does it make sense to compare the absolute values of numbers rather than the numbers themselves?

Understanding the Four-Quadrant Coordinate Plane

► For problems 1–6, plot and label each point in the coordinate plane. Name the quadrant or axis where the point is located.

1 $A(-3, -2)$

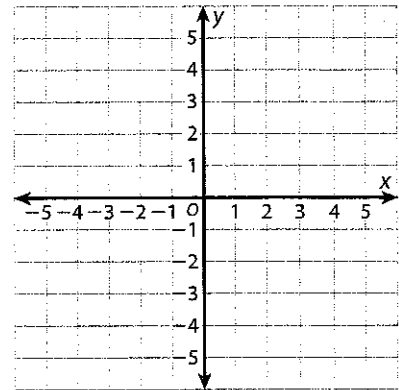
2 $B(4, -4)$

3 $C(2, 3)$

4 $D(-2, 4)$

5 $E(3, -3)$

6 $F(4, 0)$



7 If point E above is reflected across the x -axis, what would be the coordinates of the reflection? Explain.

8 Imagine that one of the points given in problems 1–6 has been reflected. The reflection is in Quadrant II. What are the possible coordinates of the reflected point? Explain.

9 Bradley says that if point B is reflected across the y -axis and its reflection is then reflected across the x -axis, the result is point D . Is Bradley correct? Explain.