Objective: REVIEW

Divide Fractions, Mixed Numbers and the Coordinate Plane

To divide a number by a fraction, multiply the number by the reciprocal of the fraction.

Two numbers are reciprocals if their product is 1. To find the reciprocal of a fraction, switch its numerator and denominator. For example, the reciprocal of $\frac{3}{5}$ is $\frac{5}{3}$ since $\frac{3}{5} \times \frac{5}{3} = 1$ You can use models to help you divide fractions.

You can use a coordinate plane to locate points. A coordinate plane is formed by a horizontal number line, called the x-axis, and a vertical number line, called the y-axis. Each axis includes both positive and negative numbers. The coordinate plane is divided into four sections called quadrants. They are numbered with Roman numerals in a counterclockwise direction, as shown below.
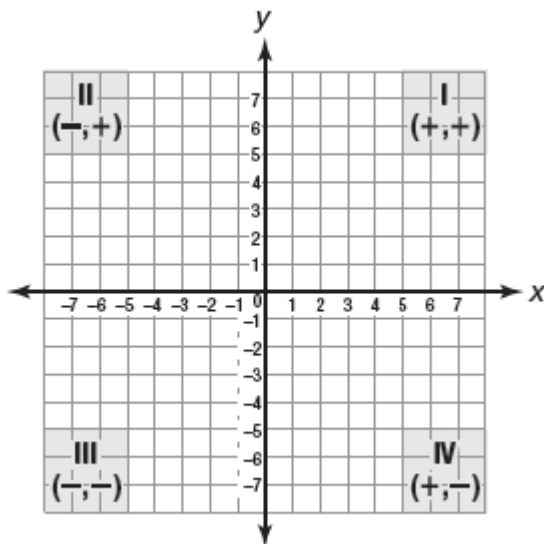
An ordered pair of numbers in the form (x, y) names a point on a coordinate plane. The first number of the ordered pair is the x-coordinate. It tells how many units to move to the left or the right of the origin, point (0, 0). The second number is the y-coordinate. It tells how many units to move up or down from the origin. By looking at whether the x- and y-coordinates are positive or negative, you can tell which quadrant contains a given point without seeing it graphed on a coordinate plane.

1. Hassan drew the model below to represent a division sentence.
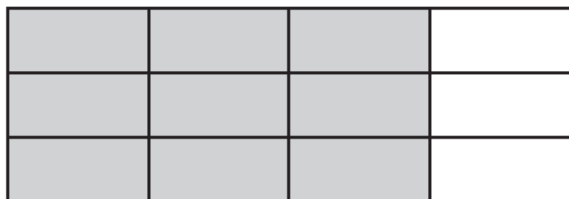
   Which of the following division sentences does the model represent?

   A. $\frac{1}{2} \div \frac{1}{6}$

   B. $\frac{1}{4} \div \frac{2}{3}$

   C. $\frac{3}{4} \div \frac{2}{3}$

   D. $\frac{3}{4} \div \frac{1}{12}$

2. $\frac{1}{20} \div \frac{4}{5} = \square$

   A. $\frac{1}{25}$

   B. $\frac{1}{20}$

   C. $\frac{1}{16}$

   D. 25

3. $10\frac{1}{2} \div 3\frac{1}{5} = \square$

   A. $1\frac{23}{32}$

   B. $3\frac{9}{32}$

   C. $3\frac{3}{5}$

   D. $5\frac{1}{2}$

4. What is the reciprocal of 4?

   A. -4

   B. 0

   C. $\frac{1}{4}$

   D. $|4|$

5. What is the reciprocal of $4\frac{5}{8}$?

   A. $\frac{8}{45}$

   B. $\frac{8}{37}$

   C. $\frac{8}{5}$

   D. $3\frac{7}{8}$

6. Which shows how you can check that $\frac{5}{8} \div \frac{2}{3} = \frac{15}{16}$?

   A. $\frac{15}{16} \div \frac{2}{3} = \frac{5}{8}$

   B. $\frac{15}{16} \div \frac{5}{8} = \frac{2}{3}$

   C. $\frac{3}{2} \times \frac{15}{16} = \frac{5}{8}$

   D. $\frac{2}{3} \times \frac{15}{16} = \frac{5}{8}$

7. Joe is making a recipe that calls for $\frac{3}{4}$ teaspoon of cinnamon. His only measuring spoon holds $\frac{1}{8}$ teaspoon. How many times will he need to fill his measuring spoon to get enough cinnamon for the recipe?

   A. $\frac{3}{32}$

   B. 3

   C. 6

   D. 12

8. Diego practices guitar for a total of $9\frac{3}{4}$ hours each week. He practices for $\frac{3}{4}$ hour each time. How many times does Diego practice guitar each week?

   A. 13

   B. 9

   C. 6

   D. 3

9. Vera estimates that it will take her $16\frac{2}{3}$ hours to complete a project for her playwriting class. She spent $4\frac{1}{6}$ hours working on the project last weekend. What fraction of the time needed to complete the project did she work last weekend?

   A. Solve the problem. Show your work.

   B. Explain how to check that the quotient you got in Part A is correct.

   _____

   _____

   _____

10. Determine if the solution for each problem is correct. Select True or False.

A. $2\frac{1}{3} \div 1\frac{2}{3} = 1\frac{2}{5}$ ○ True ○ False

B. $9\frac{2}{5} \div 2\frac{3}{5} = 3\frac{1}{5}$ ○ True ○ False

C. $1\frac{3}{4} \div \frac{7}{8} = 2$ ○ True ○ False

D. $\frac{4}{9} \div 2\frac{1}{3} = \frac{4}{7}$ ○ True ○ False

11. Draw a line from each fraction or mixed number to its reciprocal.

A. $\frac{2}{3}$ ●   ● $\frac{4}{21}$

B. $5\frac{1}{4}$ ●   ● $\frac{7}{4}$

C. $1\frac{5}{6}$ ●   ● $\frac{5}{18}$

D. $\frac{4}{7}$ ●   ● $\frac{3}{2}$

E. $3\frac{3}{5}$ ●   ● $\frac{6}{11}$

12. Look at each expression. Does it simplify to $2\frac{3}{5}$? Select Yes or No.
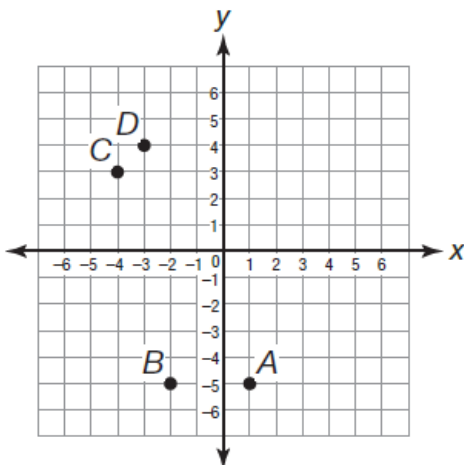
A. $3\frac{9}{10} \div 1\frac{1}{2}$ ○ Yes ○ No

B. $1\frac{6}{7} \div \frac{5}{7}$ ○ Yes ○ No

C. $4\frac{1}{3} \div 1\frac{2}{3}$ ○ Yes ○ No
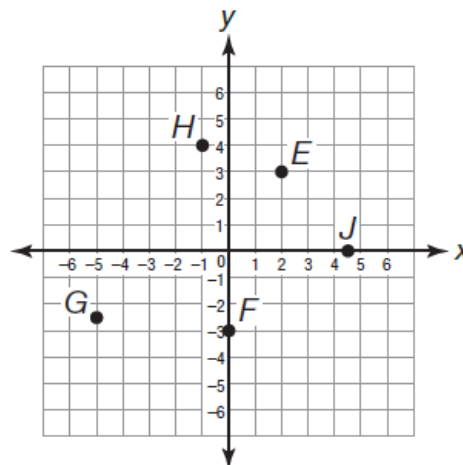
D. $3\frac{1}{2} \div \frac{4}{5}$ ○ Yes ○ No

Use the coordinate plane for questions 1–3.

Use the coordinate plane for questions 4–6.

1. Which point is located at $(-2, -5)$?

   A. point A

   B. point B

   C. point C

   D. point D

2. Which point is located at $(-4, 3)$?

   A. point A

   B. point B

   C. point C

   D. point D

3. Which point is located in Quadrant IV?

   A. point A

   B. point B

   C. point C

   D. point D

4. Which ordered pair names the location of point J?

   A. $(0, -4.5)$

   B. $(0, 4.5)$

   C. $(-4.5, 0)$

   D. $(4.5, 0)$

5. Which point is located at $(-5, -2\frac{1}{2})$?

   A. point E

   B. point F

   C. point G

   D. point H

6. In which quadrant is point H located?

   A. Quadrant I

   B. Quadrant II

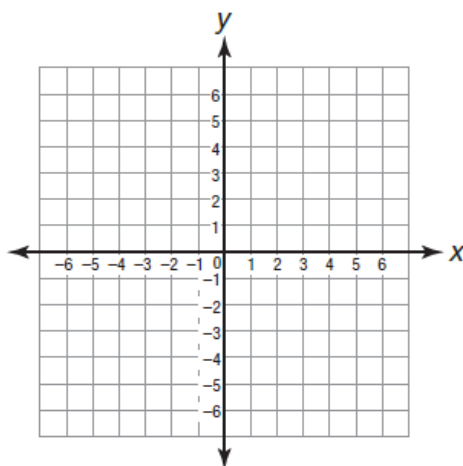   C. Quadrant III

   D. Quadrant IV

7. The *x*- and *y*-coordinates of point *N* are both negative. In which quadrant is point *N* located?

   A. Quadrant I

   B. Quadrant II

   C. Quadrant III

   D. Quadrant IV

8. Point *V* is located at $(5.2, -7.3)$. In which quadrant is point *V* located?

   A. Quadrant I

   B. Quadrant II

   C. Quadrant III

   D. Quadrant IV

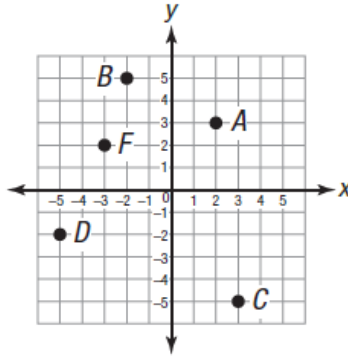**9.** Use the coordinate plane below.

   A. Plot and label point *P* at $(3, -4)$.

   B. Plot a point in Quadrant II. Label it point *B*. What are the coordinates of point *B*?

10. Circle every ordered pair that is located in Quadrant II of a coordinate plane.

   A. $(0, 4)$

   B. $(-1, 3)$

   C. $(-4, 1)$

   D. $(-3, -1)$

   E. $(-2, 3)$

   F. $(-2, 0)$

11. Circle the letter that represents the point for each ordered pair.
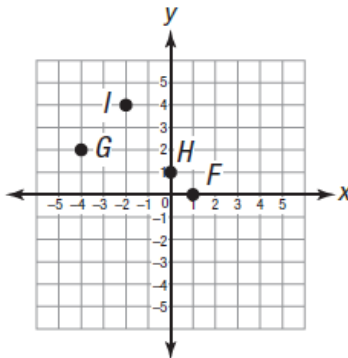

$(3, -5) =$
A
B
C
D
F

$(-2, 5) =$
A
B
C
D
F

$(-3, 2) =$
A
B
C
D
F

12. Determine if each point, as indicated by a letter, matches the ordered pair. Select True or False for each statement.

A. $F = (-1, 0)$ ○ True ○ False
B. $G = (-4, 2)$ ○ True ○ False
C. $H = (0, 1)$ ○ True ○ False
D. $I = (-2, 4)$ ○ True ○ False

HW Homework

LESSON SE 1e

Objective

. Simplify each expression. Write each expression in the correct box.

| $8\frac{2}{5} \div 2\frac{2}{5}$ | $1\frac{1}{8} \div \frac{1}{2}$ | $1\frac{1}{2} \div \frac{2}{3}$ | $4\frac{1}{5} \div 1\frac{1}{5}$ |

Solution of $2\frac{1}{4}$	Solution of $3\frac{1}{2}$

Write each ordered pair in the correct box.

| $(-2, 3)$ | $(1, 4)$ | $(2, -1)$ | $(-3, -5)$ |

| $(3, 5)$ | $(-4, 1)$ | $(-2, -2)$ | $(3, -4)$ |

Quadrant I	Quadrant II	Quadrant III	Quadrant IV