

**LESSON** **Algebra Lab Recording Sheet** p. 850

**12-1** *Model Inverse Variation*

**Try This**

**Activity 1**

Use 12 square tiles to form a rectangle with an area of 12 square units, or draw the rectangle on grid paper. Use a width of 1 unit and a length of 12 units.

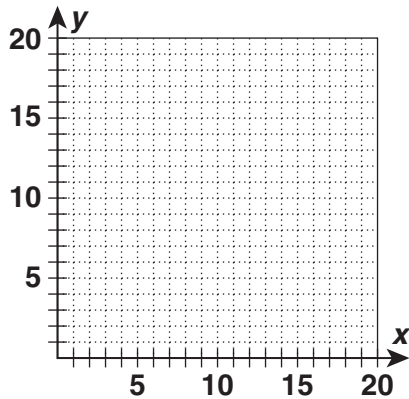
Your rectangle should look like the one shown.



Using the same 12 square tiles, continue forming rectangles by changing the width and length until you have formed all the different rectangles you can have an area of 12 square units.

Complete the table as you form each rectangle.

Width ( $x$ )	Length ( $y$ )	Area ( $x \cdot y$ )
1	12	12



Plot the ordered pairs from the table on a graph. Draw a smooth curve through the points.

**LESSON** **Algebra Lab Recording Sheet** p. 850

**12-1** **Model Inverse Variation** continued

**Try This**

1. Look at the table and graph above. What happens to the length as the width increases?

\_\_\_\_\_

Why?

\_\_\_\_\_

2. This type of relationship is called an inverse variation. Why do you think it is called that?

\_\_\_\_\_

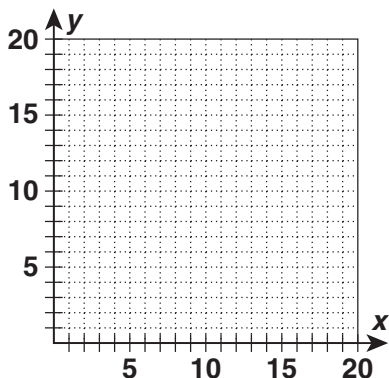
3. For each point, what does  $xy$  equal?

\_\_\_\_\_

Complete the equation  $xy = \underline{\hspace{2cm}}$ .

Solve this equation for  $y$ . \_\_\_\_\_

4. Form all the different rectangles that have an area of 24 square units. Record their widths and lengths in a table. Graph your results.



Width ( $x$ )	Length ( $y$ )	Area ( $x \cdot y$ )

Write an equation relating the width  $x$  and length  $y$ .

\_\_\_\_\_

5. **Make a Conjecture** Using the equations you wrote in 3 and 4, what do you think the equation of any inverse variation might look like when solved for  $y$ ?

\_\_\_\_\_