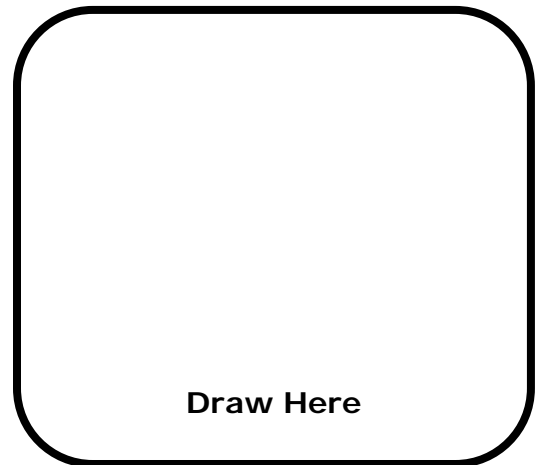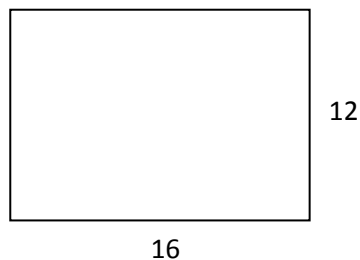Name _____          Date _____

**Using Tiling to Find Area - Step-by-Step Lesson:**

**Lesson:** Area Problems

1. Break the rectangle into 4 equal pieces by drawing and labeling the length of all four pieces. Calculate the area before and after you break it apart.
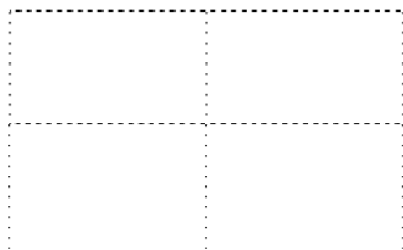
12

16

**Draw Here**

**Explanation:**

Step 1) Calculate the area before we break it apart:

Area of rectangle = Length x Width

$$= \quad 12 \quad x \quad 16$$

$$= \quad 192$$

Step 2) Time to break the rectangle apart. If we draw a line through each midpoint, we will break the rectangle into 4 pieces.

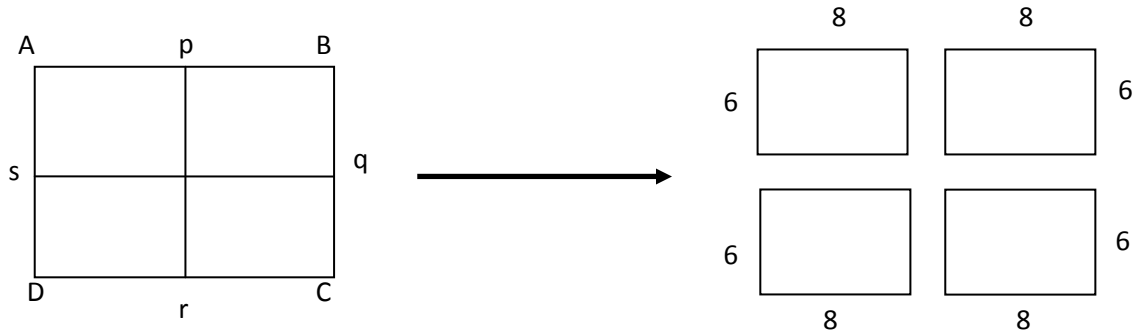Join the midpoint of each side to the midpoint of the opposite side. As a result of breaking up the square, the height and width of each box is half:

Width =  16/2 = 8              Height = 12/2 = 6



So length and width of each small rectangle is 6 and 8.

Area of small rectangles = 8 X 6

$$= 48$$

Step 3) Let's check if we are correct. Our original area of 192 should remain the same.

Total Area = Box 1 Area + Box 2 Area + Box 3 Area + Box 4 Area

192        =  48        +        48   +    48      +      48

Our original area of 192 is unchanged, so we can be sure that we split up the rectangle properly.