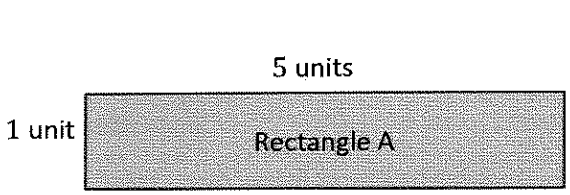
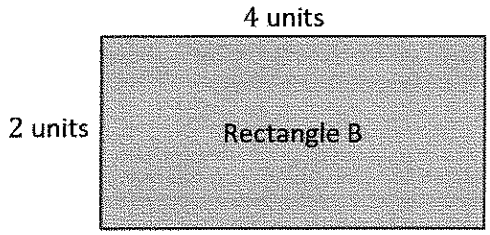
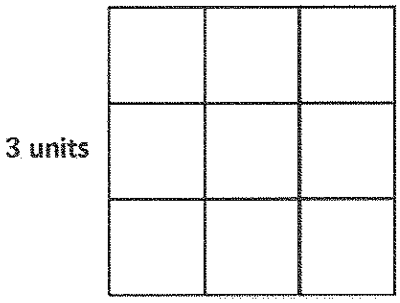
G3-M7-Lesson 20

1. Rex uses unit square tiles to make rectangles with a perimeter of 12 units. He draws his rectangles as shown below. Can Rex make another rectangle using unit square tiles that has a perimeter of 12 units? Explain your answer.





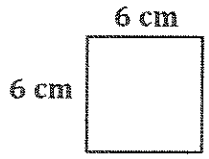


Yes. Rex can also make a square with each side measuring 3 units. Squares are also rectangles. To find the perimeter, I would add $3 + 3 + 3 + 3 = 12$.

The addition double for 12 is $6 + 6$. In Rectangle A, I split the 6 apart into side lengths of 5 and 1. In Rectangle B, I split the 6 apart into side lengths of 4 and 2. I can still split the 6 up another way: 3 and 3.

2. Maureen draws a square that has a perimeter of 24 centimeters.

   a. Estimate to draw Maureen's square below. Label the length and width of the square.



$6 + 6 + 6 + 6 = 24$

$4 \times 6 = 24$

To figure out the side lengths, I think "4 times what equals 24"? I know that $4 \times 6 = 24$, so each side is 6 centimeters.

   b. Find the area of Maureen's square.

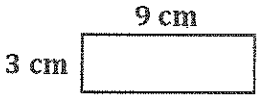
$6 \times 6 = 36$

The area of Maureen's square is 36 square centimeters.

I can multiply the side lengths to find the area.

   c. Estimate to draw a different rectangle that has the same perimeter as Maureen's square.

Sample response:



$9 + 3 + 9 + 3 = 24$

The addition double for 24 is $12 + 12$. Another pair of numbers that adds up to 12 is 9 and 3.

   d. Which shape has a greater area, Maureen's square or your rectangle?

$3 \times 9 = 27$

My rectangle has an area of 27 square centimeters. Maureen's square has a greater area because $36 > 27$.

I can multiply 3×9 to find the area of my rectangle and then compare it to the area of Maureen's square.