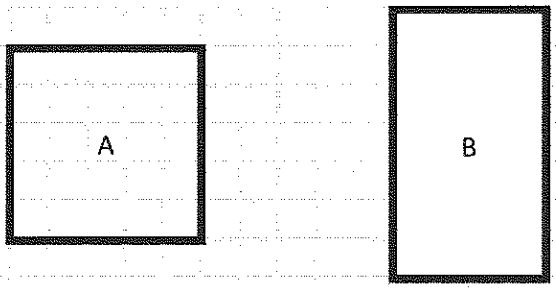
G4-M3-Lesson 1

1. Determine the perimeter and area of rectangles A and B.

To find the area of rectangle A, I can skip count the square units inside: 5, 10, 15, 20, 25. Or I can multiply: $5 \times 5 = 25$.



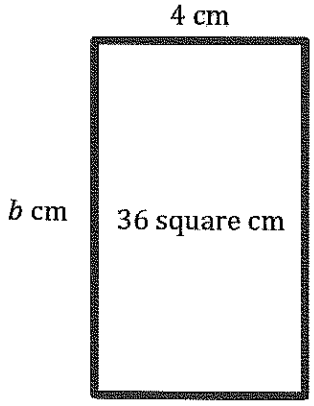
I can't see the units inside rectangle B. So, I count the number of units for the side lengths and use the formula for area ($A = l \times w$).

a. $A =$ *25 square units* $A =$ *28 square units*

b. $P =$ *20 units* $P =$ *22 units*

I can use a formula for perimeter such as $P = 2 \times (l + w)$, $P = l + w + l + w$, or $P = 2l + 2w$.

2. Given the rectangle's area, find the unknown side length.



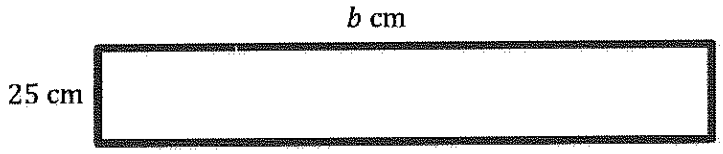
I can think, "4 times what number equals 36?" Or, I can divide to find the unknown side length: $A \div l = w$.

$A = l \times w$
$36 = 4 \times b$
$b = 9$

$b =$ *9*

The unknown side length of the rectangle is 9 centimeters.

3. The perimeter of this rectangle is 250 centimeters. Find the unknown side length of this rectangle.



$P = w + w + l + l$

$250 = 25 + 25 + l + l$

$250 = 50 + l + l$

$250 - 50 = 200$

$200 \div 2 = b$

$100 = b$

I subtract to find the sum of the unknown sides. I divide to find the unknown length, b cm.

The length of the rectangle is 100 cm.

4. The following rectangle has whole number side lengths. Given the area and perimeter, find the length and width.

$A = 48$ square cm

$P = 32$ cm

$l =$ 12 cm

$w =$ 4 cm

I list factor pairs for 48.

Dimensions of a 48 square cm Rectangle

Width	*Length*
1 cm	48 cm
2 cm	24 cm
3 cm	16 cm
4 cm	12 cm
6 cm	8 cm

I try the different possible factors as side lengths as I solve for a perimeter of 32 cm using the formula $P = 2L + 2W$.

$P = (2 \times 8) + (2 \times 6)$

$P = 16 + 12$

$P = 28$

No!

$P = (2 \times 12) + (2 \times 4)$

$P = 24 + 8$

$P = 32$

Yes! The factors 4 and 12 work!