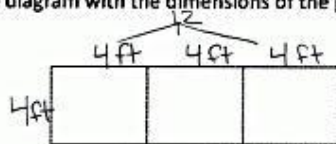


Name Jack Date \_\_\_\_\_

1. A rectangular porch is 4 feet wide. It is 3 times as long as it is wide.

- a. Label the diagram with the dimensions of the porch.



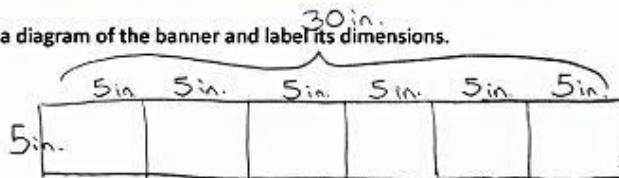
- b. Find the perimeter of the porch.

$$\begin{aligned}
 P &= 2 \times (l + w) \\
 &= 2 \times (12 + 4) \\
 &= 2 \times 16 \\
 &= 32
 \end{aligned}$$

$P = 32 \text{ feet}$

2. A narrow rectangular banner is 5 inches wide. It is 6 times as long as it is wide.

- a. Draw a diagram of the banner and label its dimensions.



- b. Find the perimeter and area of the banner.

$$\begin{aligned}
 P &= 2 \times (l + w) & P &= 70 \text{ in.} & A &= l \times w & A &= 150 \text{ sq. in.} \\
 &= 2 \times (30 + 5) & & & &= 30 \times 5 \\
 &= 2 \times 35 & & & &= 3 \text{ tens} \times 5 \\
 &= 70 & & & &= 15 \text{ tens} = 150
 \end{aligned}$$

3. The area of a rectangle is 42 square centimeters and its length is 7 centimeters.

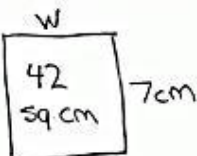
a. What is the width of the rectangle?

$$A = l \times w$$

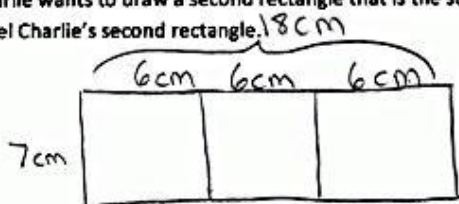
$$A \div l = w$$

$$42 \div 7 = 6$$

$$w = 6 \text{ cm}$$



b. Charlie wants to draw a second rectangle that is the same length but is 3 times as wide. Draw and label Charlie's second rectangle.



c. What is the perimeter of Charlie's second rectangle?

$$P = 2 \times (l + w)$$

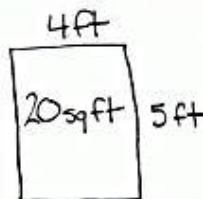
$$= 2 \times (7 + 18)$$

$$= 2 \times 25$$

$$P = 50 \text{ cm}$$

4. The area of Betsy's rectangular sandbox is 20 square feet. The longer side measures 5 feet. The sandbox at the park is twice as long and twice as wide as Betsy's.

a. Draw and label a diagram of Betsy's sandbox. What is its perimeter?



$$P = 18 \text{ ft}$$

$$A \div l = w$$

$$20 \div 5 = 4$$

$$w = 4 \text{ ft}$$

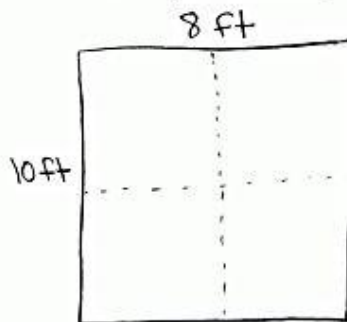
$$P = 2 \times (l + w)$$

$$= 2 \times (5 + 4)$$

$$= 2 \times 9$$

$$= 18$$

b. Draw and label a diagram of the sandbox at the park. What is its perimeter?



$$P = 2 \times (l + w)$$

$$= 2 \times (10 + 8)$$

$$= 2 \times 18$$

$$= 36$$

$$P = 36 \text{ ft}$$

c. What is the relationship between the two perimeters?

Betsy's = 18 ft

Park's = 36 ft

The perimeter of the park's sandbox is double the perimeter of Betsy's sandbox.

d. Find the area of the park's sandbox using the formula,  $A = l \times w$ .

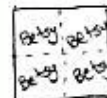
$$A = l \times w \quad A = 80 \text{ sq ft}$$

$$A = 10 \times 8$$

$$= 80$$

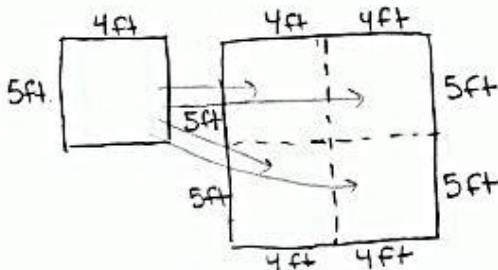
e. The sandbox at the park has an area that is how many times that of Betsy's sandbox?

Area of Betsy's    Area of Park's  
20 sq ft            80 sq ft



The sandbox at the park has an area that is 4 times that of Betsy's sandbox.

f. Compare the way the perimeter changed with the way the area changed between the two sandboxes. Explain what you notice using words, pictures or numbers.



The perimeter of the park's sandbox is double the perimeter of Betsy's sandbox. The area is four times the area of Betsy's sandbox. When the length and width are doubled, the perimeter doubles, but the area quadruples.