

Algebra Word Problems Worksheets

1. The perimeter of a rectangle is 30 inches. If its length is three times its width, find the dimensions.

2. You are designing a rectangular pet pen for your new baby puppy. You have 30 feet of fence barrier. You decide that you would like the length to be $6\frac{1}{3}$ feet longer than the width. Find the dimensions of the pet pen.

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1. The perimeter of a rectangle is 30 inches. If its length is three times its width, find the dimensions.

The width of the rectangle: w inches

The length of the rectangle: $3w$ inches

Perimeter = 2(length + width)

$$2(w + 3w) = 30$$

$$2(4w) = 30$$

$$8w = 30$$

$$\left(\frac{1}{8}\right)(8w) = \left(\frac{1}{8}\right)(30)$$

$$w = 3\frac{3}{4}$$

OR

$$2(w + 3w) = 30$$

$$(w + 3w) = 15$$

$$4w = 15$$

$$w = 3\frac{3}{4}$$

The width is $3\frac{3}{4}$ inches.

The length is $(3)\left(3\frac{3}{4} \text{ in.}\right) = (3)\left(\frac{15}{4} \text{ in.}\right) = 11\frac{1}{4} \text{ in.}$

2. You are designing a rectangular pet pen for your new baby puppy. You have 30 feet of fence barrier. You decide that you would like the length to be $6\frac{1}{3}$ feet longer than the width. Find the dimensions of the pet pen.

Width of the pet pen: x ft.

Then, $\left(x + 6\frac{1}{3}\right)$ ft. represents the length of the pet pen.

$$x + \left(x + 6\frac{1}{3}\right) + x + \left(x + 6\frac{1}{3}\right) = 30$$

$$4x + 12\frac{2}{3} = 30$$

$$4x + 12\frac{2}{3} - 12\frac{2}{3} = 30 - 12\frac{2}{3}$$

$$4x = 17\frac{1}{3}$$

$$\left(\frac{1}{4}\right)(4x) = \left(17\frac{1}{3}\right)\left(\frac{1}{4}\right)$$

$$x = 4\frac{1}{3}$$

The width is $4\frac{1}{3}$ ft.

The length is $4\frac{1}{3}$ ft. + $6\frac{1}{3}$ ft. = $10\frac{2}{3}$ ft.

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