ALGEBRAIC WORD PROBLEMS

Please Note: Although there are many different ways to solve word problems, today we are going to solve word problems using ALGEBRA!!! Let's try two examples to show the steps used to solve problems __algebraically__!

Example One

An amusement park reduced its admission price to $15.50 per day, but now charges $1.50 per ride. Mark has $26 to spend on admission and rides. How many rides can Mark ride in one day?

1. Tell what the variable is.

    Let n = the # of rides

2. Set up an equation using the variable.

    $$1.50n + 15.50 = 26$$
    $$-15.50 \quad -15.50$$

3. Solve the equation.

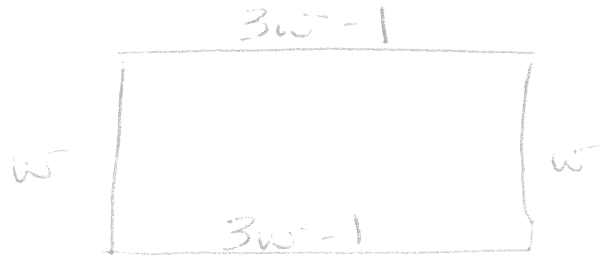 $$1.50n = 10.50$$
    $$\frac{1.50}{1.50} \quad \frac{}{1.50}$$
    $$n = 7$$

4. Check the solution in the original word problem.

    $$1.50(7) = 10.50$$
    $$10.50 + 15.50 = 26 \checkmark$$

5. Write the answer in a full sentence.

    Mark can go on 7 rides at the amusement park!!

The perimeter of a rectangle is 30 inches. The length of the rectangle is one less than three times the width. Find the dimensions. Hint: Draw and label the rectangle.

$$3w - 1$$

w $3w - 1$ w

$$3w - 1$$

1. Tell what the variable is.

Let w = the width of the rectangle

2. Set up an equation using the variable.

$$(3w - 1) + w + (3w - 1) + w = 30$$
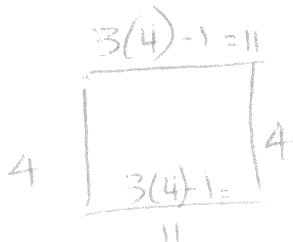$$8w - 2 = 30$$
$$+2 \qquad +2$$

3. Solve the equation.

$$\frac{8w}{8} = \frac{32}{8}$$
$$w = 4$$

4. Check the solution in the original word problem.

$3(4) - 1 = 11$

4 4

$3(4) - 1 =$
11

$$4 + 4 + 11 + 11 = 30 \checkmark$$

5. Write the answer in a full sentence.

The dimensions are:

width → 4 inches

length → 3(4) - 1 = 11 inches