

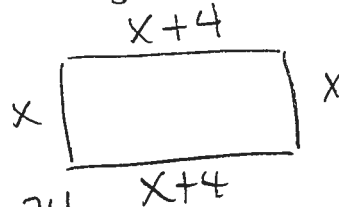
Algebra 2  
Word Problems Practice

Name: \_\_\_\_\_

**\*\*Define the variables and write only the equation needed to solve the problem.\*\***

- 1) The length of a rectangle is 4 in. greater than its width. The perimeter of the rectangle is 24 in. Find the dimensions of the rectangle.

$$x = \text{width}$$
$$x + 4 = \text{length}$$

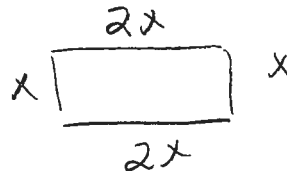


$$2(x) + 2(x+4) = 24$$
$$2x + 2x + 8 = 24$$

$$4x + 8 = 24$$

- 2) The length of a rectangle is twice its width. The perimeter is 48 in. Find the dimensions of the rectangle.

$$x = \text{width}$$
$$2x = \text{length}$$

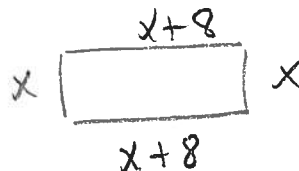


$$2(x) + 2(2x) = 48$$
$$2x + 4x = 48$$

$$6x = 48$$

- 3) A rectangular picture frame is to be 8 inches longer than it is wide. Doreen uses 84 inches of oak to frame the picture. What is the width of the frame?

$$x = \text{width}$$
$$x + 8 = \text{length}$$

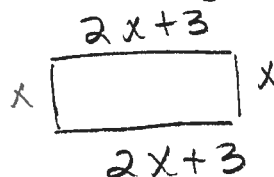


$$2(x) + 2(x+8) = 84$$
$$2x + 2x + 16 = 84$$

$$4x + 16 = 84$$

- 4) The length of a rectangular garden is 3 yards more than twice its width. The perimeter is 36 yards. What are the dimensions of the garden?

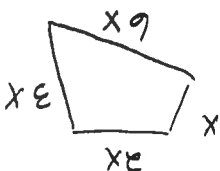
$$x = \text{width}$$
$$2x + 3 = \text{length}$$



$$2(x) + 2(2x+3) = 36$$
$$2x + 4x + 6 = 36$$

$$6x + 6 = 36$$

5) The sides of a quadrilateral are in the ratio 1: 2: 3: 6. The perimeter is 138 cm. Find the lengths of the sides.

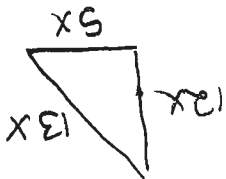


$$x + 2x + 3x + 6x = 138$$

$$12x = 138$$

$x = \text{common ratio}$

6) The sides of a triangle are in the ratio 5:12:13. What is the length of each side of the triangle if the perimeter is 15 inches?

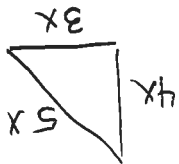


$$x = \text{common ratio}$$

$$5x + 12x + 13x = 15$$

$$30x = 15$$

7) The sides of a triangle are in the ratio 3:4: 5. What is the length of each side of the triangle if the perimeter is 120 inches?



$$x = \text{common ratio}$$

$$3x + 4x + 5x = 120$$

$$12x = 120$$

8) Find three consecutive integers whose sum is 915.

$$x = \text{1st integer}$$

$$x + 1 = \text{2nd integer}$$

$$x + 2 = \text{3rd integer}$$

$$x + x + 1 + x + 2 = 915$$

$$3x + 3 = 915$$

9) Find two consecutive even integers whose sum is 118.

$$x = \text{1st integer}$$

$$x + 2 = \text{2nd integer}$$

$$x + x + 2 = 118$$

$$2x + 2 = 118$$

10) Find three consecutive *odd* integers whose sum is 57.

$$\begin{aligned} x &= 1^{\text{st}} \text{ integer} \\ x+2 &= 2^{\text{nd}} \text{ integer} \\ x+4 &= 3^{\text{rd}} \text{ integer} \end{aligned}$$

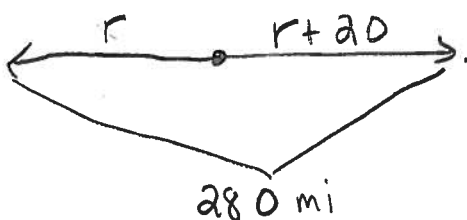
$$\begin{aligned} x + x+2 + x+4 &= 57 \\ 3x+6 &= 57 \end{aligned}$$

11) Find four consecutive integers whose sum is -186.

$$\begin{aligned} x &= 1^{\text{st}} \text{ integer} \\ x+1 &= 2^{\text{nd}} \text{ integer} \\ x+2 &= 3^{\text{rd}} \text{ integer} \\ x+3 &= 4^{\text{th}} \text{ integer} \end{aligned}$$

$$\begin{aligned} x + x+1 + x+2 + x+3 &= -186 \\ 4x+6 &= -186 \end{aligned}$$

12) Two vehicles leave the same location at the same time in opposite directions. One vehicle is traveling 20 mph faster than the other. After four hours, they are 280 miles apart. How fast is each vehicle traveling.

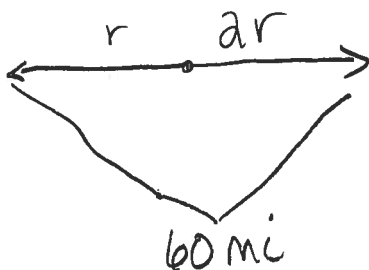


$$\begin{aligned} t &= \text{time} \\ d &= \text{distance} \\ r &= \text{rate} \end{aligned}$$

$$\begin{aligned} d &= r t \\ 280 &= 4(r+r+20) \end{aligned}$$

$$280 = 4(2r+20)$$

13) Two people riding bikes leave the same location at the same time in opposite directions. One biker is traveling twice as fast as the other. After two hours, they ~~two hours they~~ are 60 miles apart. How fast are the bikers traveling?



$$\begin{aligned} t &= \text{time} \\ d &= \text{distance} \\ r &= \text{rate} \end{aligned}$$

$$d = r t$$

$$60 = 2(r+2r)$$

$$60 = 2(3r)$$