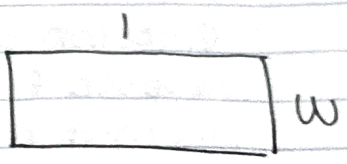
Homework Journal 4

3.1 Question 4

A farmer has 70 meters of fencing to use to create a rectangular garden in the middle of an open field.



a. Suppose the length of the garden is 30 meters

i What is the width of the garden?

5

ii What is the area of the garden?

150

we are given that the length is 30. This means 60 since $2l = 60$ $l = 30$. $70 - 60 = 10$ and since there are two w it's $2w = 10$ therefore the width is 5.

The area is $l \cdot w$. Since we know l is 30 and w is 5. When we multiply the total is 150 square meters

b. Write an expression in terms of l that represents the ~~area~~ width of the garden (in meters).

$35 - l$

$$\frac{70}{2} = \frac{2l + 2w}{2} \rightarrow \frac{35}{-l} = \frac{l + w}{-l} \rightarrow w = 35 - l$$

we know $p = 2l + 2w$. we know that the ~~tal~~ total is 70. we want to know w so we have to divide and then subtract.

c. Write an expression in terms of l that represents the area of the garden (in meters)

$35l - l^2$

$$\frac{70}{2} = \frac{2l + 2w}{2} \rightarrow 35 = l + w \rightarrow w = 35 - l$$

$A = l \cdot w \rightarrow l(35 - l) \rightarrow 35l - l^2$

we want to know the area. The formula is $A = l \cdot w$. We know the $w = 35 - l$. This is why the answer is $35l - l^2$.

We use knowledge that we already know and then figure out the perimeter and area.

3.2 Question 5

Suppose f is a linear function and f(x) varies at a constant rate of change of 2.5 with respect to x. Suppose we know that $f(1.6) = 2.3$.

a. Suppose x varies from $x = 1.6$ to $x = 1.8$

i How much did x change by?

$\Delta x = .2$ we just have to subtract $1.8 - 1.6 = 0.2$

ii what is the corresponding change in f(x)?

$\Delta f(x) = 0.5$ In order to find this we need to figure out the answer for b. Once I know my formula I plug in $x = 1.8$. The change is from $2.8 - 2.3 = 0.5$.

iii what is the value f(1.8)?

$f(1.8) = 2.8$ we also use the formula to find the answer for 1.8.

b. write a function formula for f(x)

$f(x) = 2.5x - 1.7$ The constant rate of change is 2.5 which is $2.5x$. In order to find 1.7 we multiply 2.5 by 1.6 and then subtract to get 2.3. whatever # we get to subtract is the number for the formula.

In this one we got to figure the equation in order to figure out what the answers are for other problems.

3.0 Question 5

a. some number is equal to one-sixth of the sum of 58.8, 102.5, and 139. What is the number?

102.5 + 58.8 = 300.3

300.3 / 6

↳ 50.0500

The "sum of" refers to the total of all the numbers that it is listing. You and it all up and divide by 6.

b. 250% of some number is 65.7. what is the number?

250% + x = 65.7

$\frac{6.5 \cdot 7 \cdot 100}{250} \rightarrow 26.28$

since we are talking % we have to divide 100 by 250. We first multiply our answer by 100 & then divide it by the percentage to find what "some" number is.

c. five-sevenths of some number increased by 15 is equal to 3 times the number. what is the number?

$\frac{5}{7}x + 15 = 3x \rightarrow \frac{5}{7}x - 3x = -15 \rightarrow \frac{-16x}{7} = -15$

↳ $\left(\frac{-7}{16}\right) \cdot \frac{-16x}{7} = \frac{-7}{16}(-15) \rightarrow x = \frac{105}{16}$ $x = 6.5625$

In order to find this answer we should create an equation. This isn't like the other ~~equations~~ problems you have to create an equation to find this.

In this problem we have to figure out the number based on hits. we have to figure it out when given different problems.

3.0 Question 8

a. If $f(x) = \sqrt{x}$, find the value of x such that $f(x) = 9$

$x = 81$ we need to find $f(x) = 9$ not $\sqrt{9}$. READ The problem carefully.

$\sqrt{81} = 9 \rightarrow f(81) = \sqrt{81} \rightarrow 9$.

b. If $g(x) = 5(x-9) + 12$, find the value of x such that $g(x) = 42$.

$x = 15$

once again we gotta equal it to 42 b/c $g(x) = 42$. If we plug in 15 the total would be 42.

$5(x-9)+12=42$

$5x - 45 + 12 = 42$

$-12 \quad -12$

~~$5x - 45 = 30$~~

~~$+45 \quad +45$~~ →

$\frac{5(x-9)}{5} = \frac{30}{5}$

$x - 9 = 6$

$+9 \quad +9$

$x = 15$

c. If $h(x) = \frac{1}{x-7}$, find the value of x such that $h(x) = -10.5$.

$x-7\left(\frac{1}{x-7}\right) = (-10.5)x-7 \rightarrow 1 = -10.5(x-7) \rightarrow 1 = -10.5x + 73.5$

$-73.5 \quad -73.5$

$\hookrightarrow \frac{72.5}{-10.5} = \frac{-10.5x}{-10.5} \rightarrow \boxed{x = -72.5/-10.5}$

In this problem we had to learn how to find x when given the equation and the answer. Got to read the questions carefully