Homework Journal 5

3.3 question 1

The function f determines the cost (in dollars) of a new Honda Accord in terms of the number of years t since 2000. That is, f(t) represents the cost (in dollars) of a new Honda Accord t years after 2000.

a. The cost (in dollars) of a new accord in 2008?

F(8) we don't know how much money it cost but we do know the years. We are comparing it to the year 2000. Therefore we have to subtract 2008 & 2000.

b. How much more a new Accord costs in 2013 as compared to the cost of a new Accord in 2010?

f(13) - f(10) We are comparing the cost. This means that we have to subtract 2013 from 2010. Since 2000 is 13 away from 2013 its f(13). The same is for 2000 from 2010.

c. A new Accord in 2013 is how many times as expensive as a new Accord in 2010?

$\frac{f(13)}{f(10)}$ In this instance we aren't asked about how much more but how many times as expensive. In this instance we have to divide in order to find how many times its expensive.

d. $960 dollars more than the cost of a new accord in 2016

f(16) + 960 In this instance we have to subtract 2016 to 2000 in order to find the ~~difference~~ difference. From this distance we put it into function notation and add 960 dollars.

In this question we have to learn to use function notation in order to find the new accord and the costs with just function notation.

3.3 Question 6

A tank has 14 gallons of water in it when water begins draining from the tank. (Recall that water weighs 8.345 pounds per gallon).

a. If 26 pounds of water have drained from the tank, how many gallons of water are remaining in the tank?

$\frac{26}{8.345} \rightarrow 3.1156$ $14 - 3.1156 = 10.8844$ The question asks for 26 pounds. We need to figure out the pounds in order to find the gallons.

b. Define a function f that determines the number of gallons of water in the tank, f(w). In terms of the number of pounds of water that have drained from the tank since the tank started draining, w.

$f(w) = 14 - \frac{w}{8.345}$ The gallons are 14. We are trying to figure out a function for f. In this instance we divide w by the pounds of water so we find the total.

c. What is the domain of f? [0, 116.83] In order to find the domain we have to find what w is. w has to equal the # that makes #/8.345 14.

d. What is the range of f? [0, 14] In range it can only go from 0 to 14 b/c the max gallons are 14 & it only goes down to 0.

In this question we have to figure out functions and also found the domain and range by the given context.

3.3 Question 8

x	f(x)
0	13
1	0
1.5	-5.1
2	0
3	5.7

a. evaluate $f(1.5)$.

$f(1.5) = -5.1$

we first look at x b/c of $f(1.5)$. 1.5 ~~goes~~ equals to -5.1.

b. solve $f(x) = 5.7$ for x

$x = 3$

In this instance we look at f(x) instead of x since we don't know the answer.

c. what is the vertical intercept of f?

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In order to find the vertical intercept we get to look at the answer and whatever x has a zero will give us the answer. Vertical intercept is the "y-intercept"

d. list all horizontal intercepts.

1, 2

In this instance the "roots" are x-intercepts which means (#,0). When we look at the table the answer would be 1 & 2.

In this equation we have to use the table in order to evaluate functions and either figure the x with the answer or x in terms of f(x).

3.4 Question 5

a- evaluate $f(5)$ given that $f(x) = \frac{x^2+(15-5x)}{8x}$

$f(5) = 3/8$

b. evaluate $g(x+2)$ given that $g(x) = 3x^2-5x+9$

$g(x+2) = 3(x+2)^2 - 5(x+2) + 9$

c. Evaluate $h(2x)$ given that $h(y) = \frac{y^3-6}{8y}$

$h(2x) = ((2x)^3-6) \div (8(2x))$

In these questions we plug in our number. for instance with $f(5)$ we plug it in into equation. For b we also have to input the equation $(x+2)$ into all the x's in the equation. For c we are asked to input $2x$ but we have to make sure we add the parenthesis.

In this problem we have to learn the use of function notation and learn to input it into our equations.