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page 17 question 22

$$F(x) = 8 - 3x$$

$$F(-2) = 14$$

$$F(-1) = 11$$

$$F(0) = 8$$

$$F(1) = 5$$

$$F(2) = 2$$

Summary: I found this problem to quite self explanatory it was just plugging numbers into an equation and solving so I did not have any problems.

Page 17 question 34

$$F(x) = 3^x$$

$$F(-2) = 1/3^2$$

$$F(-1) = 1/3$$

$$F(0) = 1$$

$$F(3) = 3$$

$$F(2) = 9$$

Summary: I found this one to be quite like the last, just plugging in numbers and solving so I did not have any problems with this one either.

page 19 question 43

write the equation for a circle with a center at (3,-9) with a radius of 6

$$(x - 3)^2 + (y + 9)^2 = 36$$

Summary: I did not have any problems with this one because you went over an example just like this in class and I took notes on the formula so it was just a matter of plugging them in correctly.

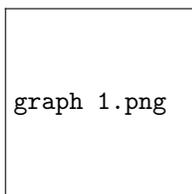
page 34 question 36

$$\begin{aligned}f(x) &= x^2 + x + 3 \\F(-2) + F(4) \\F(-2) &= (-2)^2 + -2 + 3 \\F(-2) &= 5 \\F(4) &= 4^2 + 4 + 3 \\F(4) &= 23 \\F(-2) + F(4) &= 28\end{aligned}$$

summary: I found this one slightly more difficult due to the fact that there were 2 equations but ultimately it still was not terribly hard to solve.

Page 34 question 11

$$f(x) = 9/x - 6$$

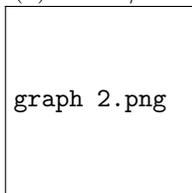


domain is all real numbers and range is infinity to -6 and -6 to negative infinity

Summary: Although I did not find this problem hard it took me while to figure out the technology and figure out the graphing section of this problem.

Page 34 question 13

$$f(x) = 3x + 1/4x + 2$$



The domain and range is all real numbers because it is just a

straight line going at a slope so it will go up and down forever and it will go out on the positive and negative x axis forever

Summary: Once again I did not struggle with the math just the technology side of these problems.

Page 35 question 34

$$f(x) = x + 1$$

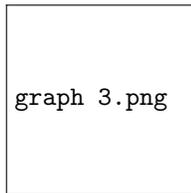
if  $x$  is less than 1 and  $x$  cubed if  $x$  is less than or equal to 0

Summary: I found this problem to be a little challenging. I had trouble figuring out how to solve this correct way and needed some help from classmates but they helped me figure it out.

Page 34 Question 19 sketch graph for

$$F(x) = 7x + 3$$

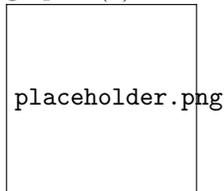
if  $x$  is less than zero and  $7x+6$  if  $x$  is greater than or equal to zero



Summary: Once again the math was not difficult it just took me a long time due to the technology being confusing for me.

page 34 question 20

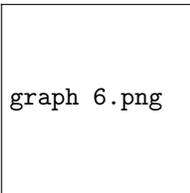
graph  $F(x)=4x-4$  if  $x$  is less than 0 and  $4x-18$  if  $x$  is greater than or equal to 0



Summary: The technology was especially difficult for this problem and I am not sure why. I have no problem with the math but the tech will not cooperate with me.

Page 34 question 8

$$H(x) = 5 - 2x^2 \text{ on } [-2, 4]$$



The rate of change is 111 percent. at -2 it sits on -3 and on 4 it sits on -27 creating a rate of change of 111 percent.

Summary: This is by far the hardest set of problems I have done for this assignment. I had trouble from start to end and no matter how much I tried I simply could not understand it.

page 34 question 9

$$K(t) = 6t^2 + 4/t^3$$

on  $[-1,3]$

The percent of change is 92 percent because the line function at -1 is 5 and at 3 it is 54 creating a 92 percent rate of change

Summary: This problem I found challenging just because it was new material but i found a great khan academy video that explained it very well so after watching that I found the problem to be much more manageable.

page 48 question 11

$$f(x) = 4x^2 - 7$$

on  $[1,b]$  to solve this we know

$$f(b)f(a)/ba$$

and we know a is 1.

$$f(b)f(a)ba = 7 + 4b2(7 + 412)b(1) = 4b24b1 = 4b + 4$$

the average rate of change is

$$4b + 4$$

Summary: Once again after that video I find the material much more manageable and not nearly as confusing as it once was.

page 48 question 18

$$r(t) = 4t^3$$

$[2,2+h]$

$$f(b)f(a)ba$$

$$a = 2, b = h + 2, f(t) = 4t^3$$

$$f(b)f(a)ba = 4(h + 2)3(4(2)3)h + 2(2) = 4(h + 2)332h = 4((h + 2)38)h$$

the average rate of change is

$$4((h + 2)38)/h$$

Summary: After doing the last problem which took me a little while i found this problem to be much easier because I watched a video showing me how to do it.

Page 52 Question 37 estimate the extrema and which points the graph will concave decrease and increase.

$$f(x) = x^4 - 4x^3 + 5$$

The lowest point in the graph is -22 and the local extrema is 5. The graph is decreasing from negative infinity to 0 and 0 to 2.5. and is increasing from 2.5 to infinity.

Summary: I did not really have any problems with questions. It seemed more like a vocabulary check just to make sure that I have all the terms down and am able to identify them.

page 60 question 1 For each pair of functions find

$$f(g(0)) \text{ and } G(f(0))$$

$$F(x) = 4x + 8$$

and

$$g(x) = 7 - x^2$$

$$G(0) = 7 - (0)^2$$

$$G(0) = 6$$

$$F(6) = 4(6) + 8$$

$$F(6) = 32$$

$$F(G(0)) = 32$$

next

$$F(0) = 4(0) + 8$$

$$F(0) = 8$$

$$G(8) = 7 - (8)^2$$

$$G(8) = -57$$

$$G(F(0)) = -57$$

Summary: I found this problem to actually be a little fun. It was not terribly difficult but had a lot of steps and required some thinking but ultimately it was just solving and plugging numbers in so I found it be a little on the easier side.

page 60 question 21 for each pair of functions find  $F(G(X))$  and  $G(F(X))$

$$F(X) = 1/x - 6$$

$$G(X) = 7/x$$

$$F(G(X)) = 1/(7/x) - 6$$

$$X = x/7$$

$$F(G(X)) = X/7$$

$$(G(F(X))) = 7/(1/x - 6)$$

$$X = 7x - 36$$

$$G(F(X)) = 7X - 36$$

Summary: I found this problem a lot more difficult to set up but once i figured out how to start the problem it was smooth sailing but it did take me a little while to figure out how to start it.

Page 61 question 27 If

$$F(x) = x^4 + 6$$

,

$$G(X) = X - 6$$

, and

$$H(X) = \sqrt{X}$$

Find

$$\begin{aligned}F(G(H(X))) \\ G(H(X)) &= \text{SQRT}X - 6 \\ F(G(H(X))) &= (\text{SQRT}X - 6)^4 + 6\end{aligned}$$

Summary: I found this problem pretty easy because after learning how to do it in the last problem, it became pretty self explanatory. There was very little actually calculating and was just plugging equations into other equations so i found quite simple.

Page 85 question 12

Write a formula for  $F(X) = -x$  shifted down 3 units and right 1 unit.

$$F(X) = |X + 2|$$

This will shift it left 2 units

$$F(X) = |X + 2| - 3$$

This will shift it left 2 units and down 3 units.

Summary: I found this to be easy because I remembered how to graph and do transformations like this from high school, The only tricky part I ran into was the flipping of the sign for the transformation on the X Axis.

Page 87 Question 33 Starting with Graph

$$F(X) = 6^x$$

Write the equation the equation of the graph that results from... (A) Reflection  $F(X)$  over the X and Y axis. (A)

$$F(X) = -6^{-x}$$

Making the 6 negative will reflect over the X axis and by making the X negative will cause it to reflect over the X axis. (B) Reflecting  $F(X)$  about the X axis, shifting left 2 units and up 2 units. (B) $F(X) =$

$$-6^x - 3$$

This will bring it down 3 units and reflect it over the X axis

$$F(X) = -6^x(X + 2) - 3$$

Adding +2 to the exponent will shift it 2 units to the left making the final transformations Left 2 units, Down 3 units and reflected over the Y axis.

Summary: I found this problem also on the easier side although i did need to do a little research to figure out the transformation to the left but other than that I did not have a problem.

Page 88 Question 39 fore each equation determine if the function is odd, even or neither. (A)

$$F(X) = 3X^4$$

(A)

$$F(-X) = 3(-X)^4$$

(A) This function is even because when you substitute the -X you get the same equation as you had before.

(B)

$$G(X) = \sqrt{X}$$

(B) This graph is neither because you if you substitute -X you do not get either form of the original function. (C)

$$H(X) = (1/x) + 3x$$

(C)

$$H(-X) = (1/-x) + -3x$$

(C) This function is odd because you get the opposite of the original function when substituting for -x.

Summary: I had no problem with this set of problems and found them to be explanatory once I knew how to solve them.

Page 89 Question 68  
determine the intervals the function is concaving and and concaving down.

$$G(X) = 5(x - 3)^2 - 2$$

The function is decreasing from Negative infinity to Negative 3. It is Increasing from Negative 3 to Positive infinity.

Summary: I found this problem to be extremely easy. All I had to do was graph it and then find the intervals which I had no problem with.

page 100 Question 13 Find  $f^{-1}(X)$  for  $F(X)=x+3$

$$F^{-1}(X) = x - 3$$

Summary: I found this to be quite easy once i found out the technique to find inverse functions.

Page 100 Question 14 Find  $F^{-1}(X)=X+5$

$$F^{-1}(X) = X - 5$$

Summary: Like last problem I found it to be easy just following steps to solve it.

Page 100 Question 5 Find  $F^{-1}(X)=2-X$

$$F^{-1}(X) = 2 - X$$

Summary: I had no trouble with this problem, just following the steps until I get the answer.

Page 100 Question 7 Find  $F^{-1}(X)=11x+7$

$$F^{-1}(X) = x - 7/11$$

Summary: This problem was just another simple one, just have to follow the method.

Page 100 Question 18 Find  $F^{-1}(X)=9+10X$

$$F^{-1}(X) = X - 9/10$$

Summary: I had no difficulty with this problem.