Homework Examples 4

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1 Page 263

7) P (t) = 11,000 $(1.085)^t$

This question was not hard this is because of the videos I watched and I also used the exponential function to write the a exponential model of the population.

2 Page 264

13) f (x) = 1 $(5)^x$

For this question I went back in the textbook to find an example of this question and found one and used it as reference to answer this and I found it helpful.

3 Page 276

23) f (x) = - 5 (4^x) - 1
As x − > oo , f(x) − > -oo
As x − > -oo, f(x) − > -oo

I found this question tricky but I found a video on Youtube explaining the video so after that I plugged in the equation into Desmos and think I answered it correctly.

25) f (x) = 3 $(1/2)^x$ - 2
As x − > oo, f(x) − > oo
As x − > -oo, f(x) − > oo

I also found this video tricky but with the same method I used to answer question 23 I did the same for this one.

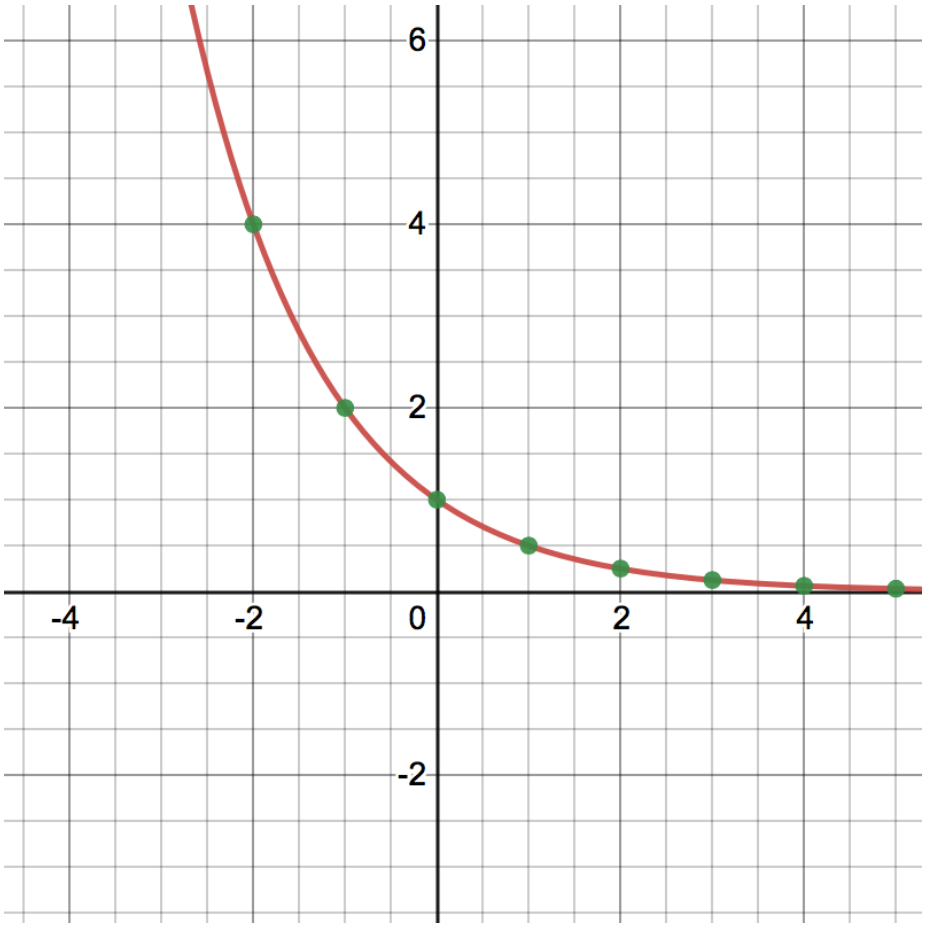

Figure 1: Page 275 11

4 Page 275

11) f (x) = 2^{-x}

17) f (x) = 4^{x}+4

I did not have trouble with this question I just added the 4 to the equation.

5 Page 264

23) 33.58mg

I figured out this question by looking back in the textbook for a similar question

and trying to figure it out using the exponential formula. I had trouble with this question.

6 Page 287

3) $a^c = b$

This question was easy to me after I watched the video on the website it explained very well and I understood. All you had to do was turn the log into exponential form.

9) log4 y = x

This question I found easy also all you had to do was turn it from exponential for to logarithmic form.

17) log3 (x) = 2 − > 3^2= 9 − > x = 9

This question was tricky but I watched a video and it explained what you have to do and I figured it out.

41) 5^x = 14 − > log5 (14) = x − > x = 1.639

This question I found hard and it took me some time to figure it out but after I watched a video on how to find the x in log form I understood.

43) 7^x = 1/15 − > log7 (1/15) = x − > log7 (15) = x − > x = 1.391

For this question I put the starting equation in logarithmic form and solved x from there this question was tricky until I watched a video.

7 Page 288

65) If the trend continues the population will exceed 45 million in the year 2014. (5 years)

This question was easy in my opinion if I answered it correctly all I did was put it in f (t) = ab^t and then plugged in 1, 2, 3, 4, 5 until the answer exceeded 45.

8 Page 298

3) *log*3 (7)

This question I had trouble with and I still do not understand it so I looked at the solutions manual and looked it up to help me understand.

17) 15 log10 (x) + 13 log10 (y) - 19 log10 (z)

This question I do not understand so I looked it up and I am not sure if I answered it correctly but I tried.

9 Page 299

27) x = -0.716575

For this question I looked it up for reference on how to do it and think I figured it out. I was having trouble with it though.

10 Page 306

1) Domain: $x > 5$
Vertical Asymptote: $x = 5$

I got this answer by watching the video on the website for reference and figured it out. This question was not very difficult.

7) Domain: x ¡ 0
Vertical Asymptote: $x = 0$

For this question I was not very sure it was tricky but I tried and this is what I got not sure if it is correct.

13)

15)

11 Page 322

3) There are 129.3 mg remaining after 1000 years.

I got this answer by watching the video on the website as reference and then I tried it and that is how I got this answer. This question was tricky at first but now I got it.

9) 422.169 years ago

This question was very tricky and I thought I was doing it right but when I

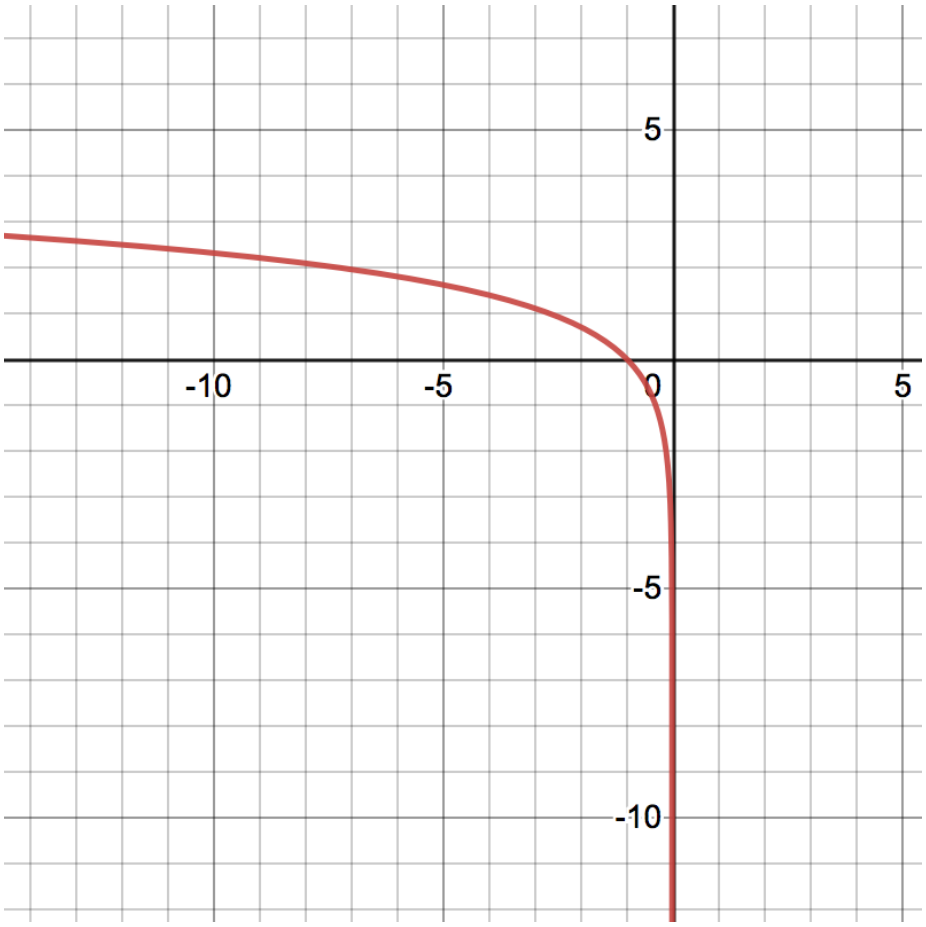

Figure 2: Page 306 13

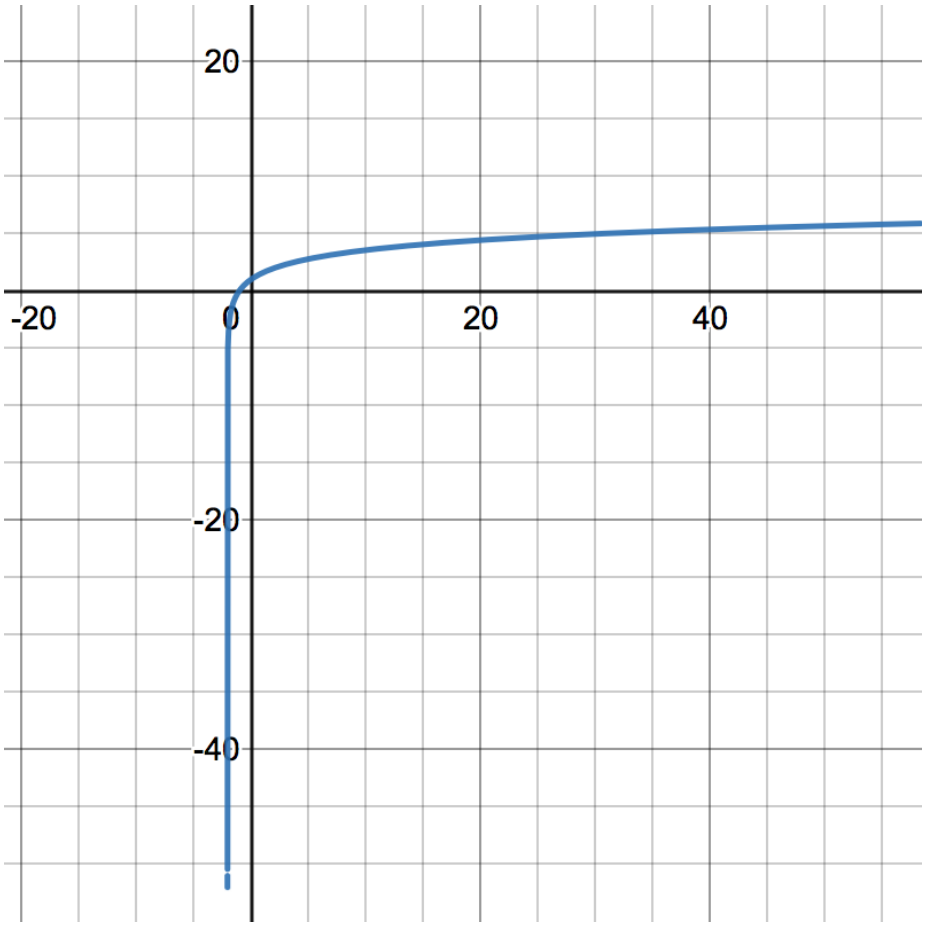

Figure 3: Page 306 15

checked the answer on the solutions manual I got the wrong answer so I do not know what I did wrong.

12 Page 323

11) P(120)= 24,000
P(100)= 15,119

I got this answer by looking at the videos on the website but these are the wrong answers and I do not know where I went wrong and I need help with these.

17) It will take 54 hours for the number of crystals to double.

I got this answer by plugging in numbers to the equation until the number of crystals doubled and that is how I figured out that it will take 54 hours for the crystals to double.

13 Page 325

29) 63,095.7

I got this answer with my tutor I found it tricky and we followed the formula of M = 2/3 log (S/S0).

31) S = 5.8167

I had help from a tutor also with this problem we used the same formula as question 29 to answer this question it was not so tricky as the last one.

33) a) 1,640,670
b) 1.4 hours
c) No, they are both equal to each other.
d) No, they should not worry.

I also had help from a tutor with this question I had trouble with it but I finally understood it when we we used formulas to answer it.

14 Page 327

39) 31.5 days

I also figures this question out with a tutor and we used the formulas for the given problem and figures it out.

15 Page 335

9) y (x) = 776.25 $(1.426)^x$

For this question I watched the videos to figure this out. This question was tricky at first but with the videos helped.

11) y (x) = 724.44 $(.738)^x$

I used videos to figure this question out it was also tricky but I figured it out.

13) a) y = 54.954 $(1.054)^x$
b) 204.65 billion in expenditures

I had a lot of trouble with this question and I watched the videos and kind of figured it out but I looked at the solution manual.

15) 11.128 cents per kilowatt hour

For this question I found it tricky and tried using the videos so I tried it and ended up using the solutions manual also.