Homework Examples 6

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1 Page 409

1)
3)
For questions 3 and 5 I plugged in the equation the question gave me into DESMOS and got that graph.

2 Page 410

13) Amplitude = 2
Midline = y = 4
Period = 2pi/3
Horizontal Shift = 21

15) Amplitude = 1
Midline = y = -3
Period = 12pi
Horizontal Shift = pi

For the questions 13 and 15 I used the equations they gave us to break it down and and solve for each part of the question.

3 Page 411

21) D(t) = 50 - 7sin (pi/12t)

For question 21 I used the information they gave us to construct a graph and after doing the graph I found the amplitude, midline and period to construct the equation.

23) a) Period = 10 minutes, Amplitude = 12.5 meters, Midline = y = 13.5 meters
b) h(t) = -12.5cos (2pi/10t) + 13.5

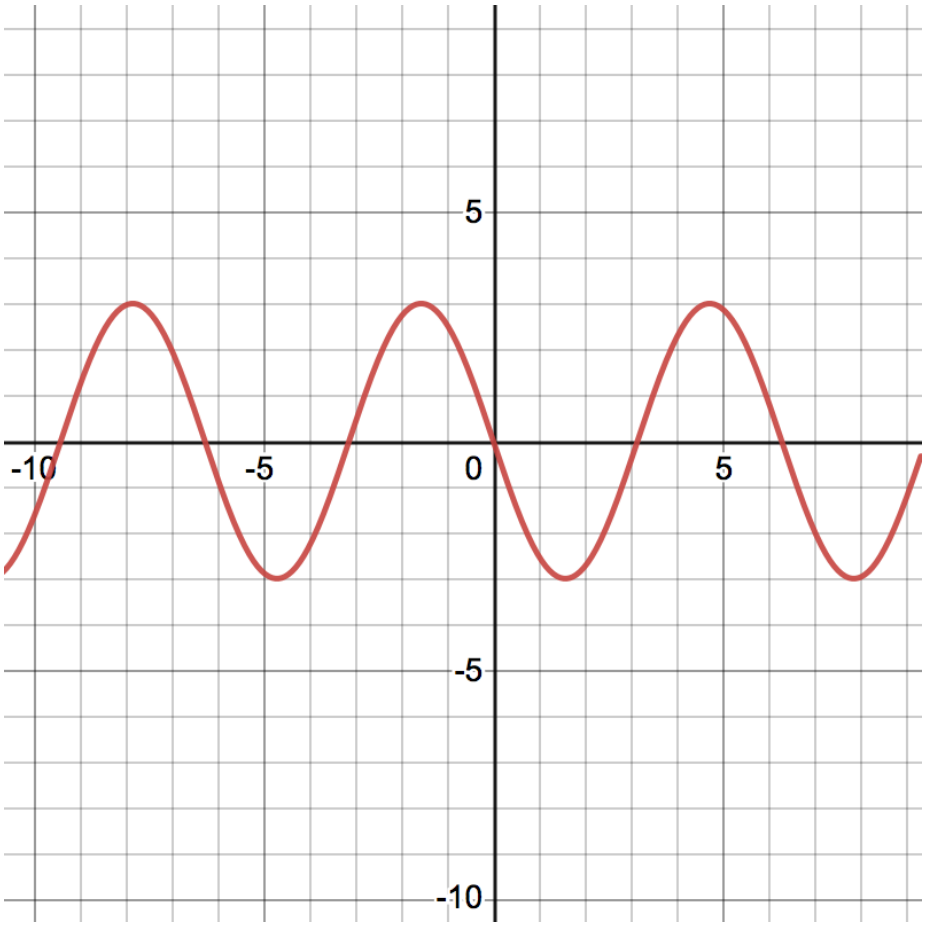

Figure 1: Page 409 1

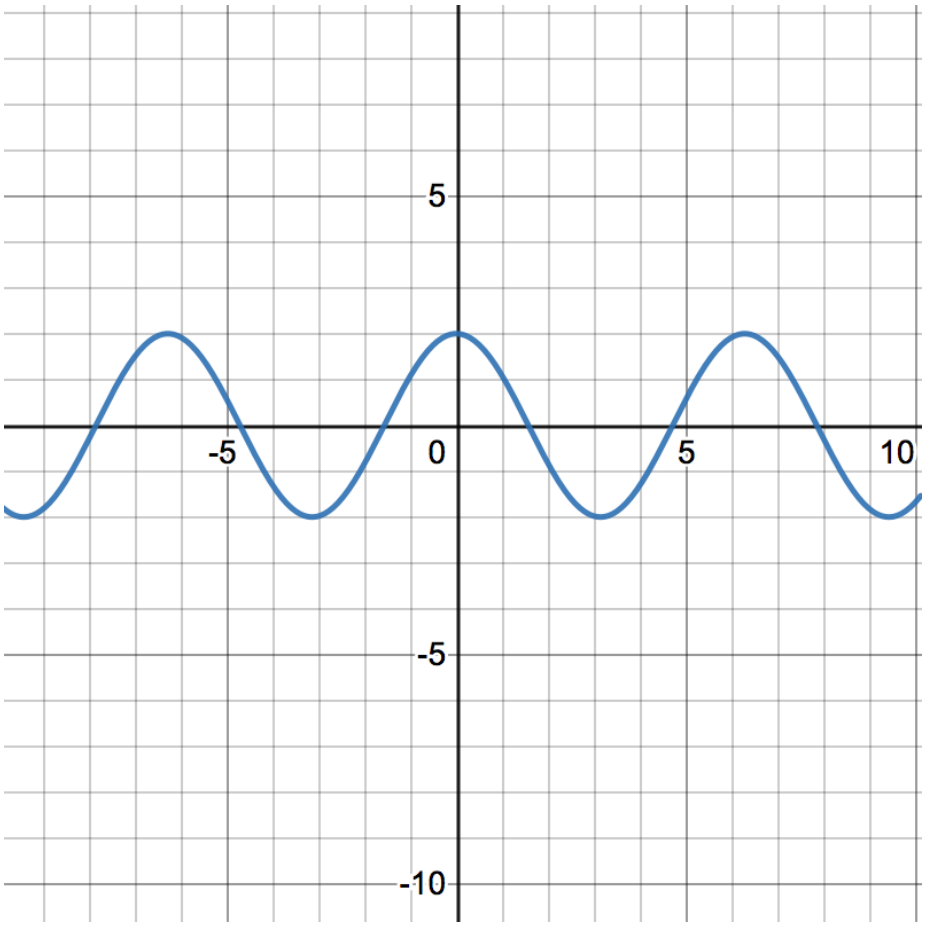

Figure 2: Page 409 3

c) t = 5 h(5) = -12.5 cos (2pi/10(5)) + 13.5 = 26 meters

This question I had trouble in but I started by finding the period and than using the facts the question gave us to answer the question. I used the formula the question asked to use.

4 Page 419

5) Period = pi/4 , Horizontal Shift = 8 units to the right

I found these answers by using the equation they gave which is f(x)=2tan(4x-32) and the period is pi/4 and the Horizontal shift is 32/4 = 8.

9) Period = 6 , Horizontal Shift = 3 units to the left

For this question I used the same thing I did for the last question by using the equation they gave us and found everything.

5 Page 420

15)

6 Page 421

23) sec (-x) = -sec x = -2
25) csc (-x) = csc x = 5
27) csc (-x) = csc x = 5

For these three questions I did the same thing to answer them. To begin this question you have to know what a sec and csc is. For example, sec is 1/cos and csc is 1/sin.

7 Page 429

1) = pi/4

11) = - pi/3

19) = sin -1 ($\sqrt{2}$/2) = pi/4

25) = cos (x) = 1/$\sqrt{17}$

In these four questions I expressed all the following equations and put it into

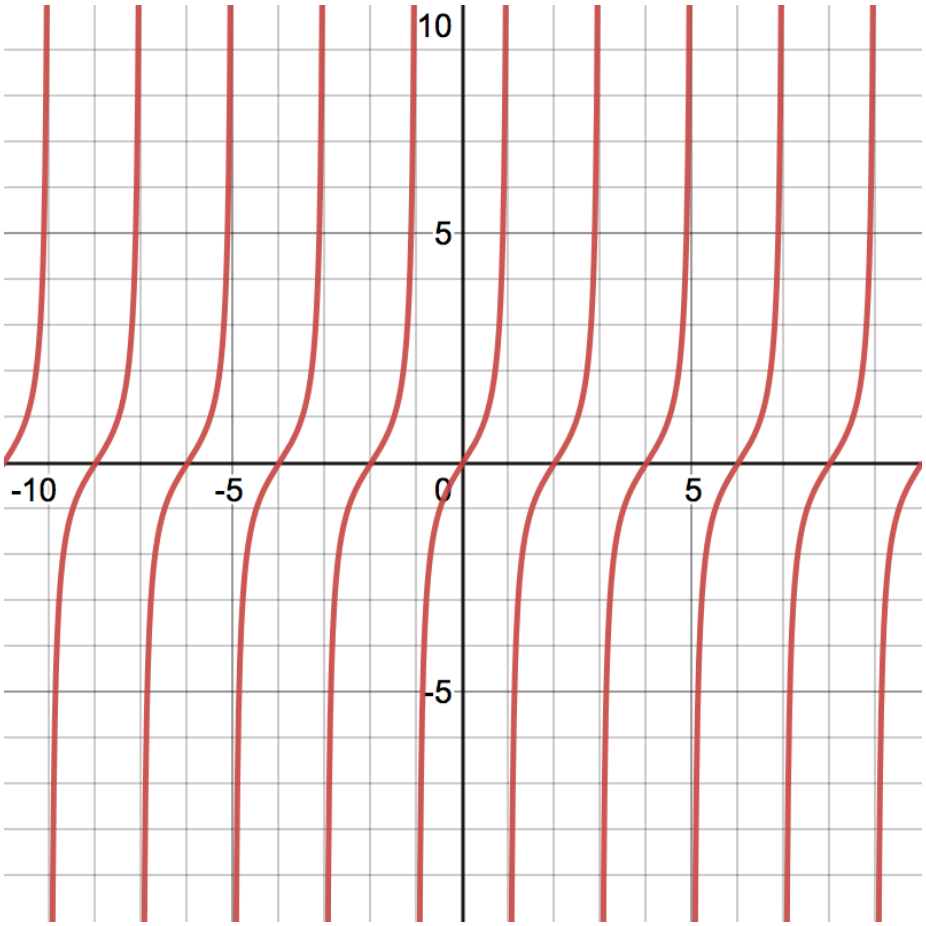

Figure 3: Page 420 15

radians from the equation. I did this by using the notes they showed in the chapter in the book.

8 Page 440

3) θ = pi/3
θ = 5pi/3

7) θ = pi/2
θ = 3pi/2

9) cos(θ) = $\sqrt{2}/2$

11) sin(θ) = - 1/2

15) sin(3θ) = - $\sqrt{2}/2$

19)$cos(3\theta) = \sqrt{2}/2$

$For these questions I solved for each equation they gave us and used the notes they gave us in the chapter.$

35)$x = 0.7381 or x = 1.3563$

37)$x = 0.9291 or x = 3.0709$

$For these two questions I solved the equation for the first two positive answers that I figured out watching the chapte$

9 Page 448

7) D(t) = -13 cos (pi/12(t - 5)) + 50

For this question I found the amplitude which is 13 and the midline which is 50 and the horizontal stretch factor which is pi/12 and finally the horizontal shift which is equal to -5 and with these numbers I put together the equation.

9) P(t) = -25 cos (pi/6(t - 3)) + 129

I figured this question out by doing the same thing I did in the last question by finding the midline which is 129 and the amplitude which is 25 and the horizontal stretch factor which is pi/6 and than put together the equation.

10 Page 449

11) a) D(t) = 20 cos (pi/12(t - 17)) + 85
b) The temperature at 9 AM was 75 degrees.

For this question I found all the important points and made the equation and than plugged in the numbers to find out that at 9 am at 75 degrees.

13) a) D(t) = 8 sin (pi/12(t - 10)) + 55
b) The first time the temperature reaches 51 degrees is at 8 am which is 8 hours past midnight.

For this question I found all the points just like last question to make the equation and than with the equation I plugged in the number to find when the temperature first reaches 51 degrees like I did for last question.