MAT 151 Quiz 13

Apr. 23, 2020

For the next two questions, use the following Figure 1.

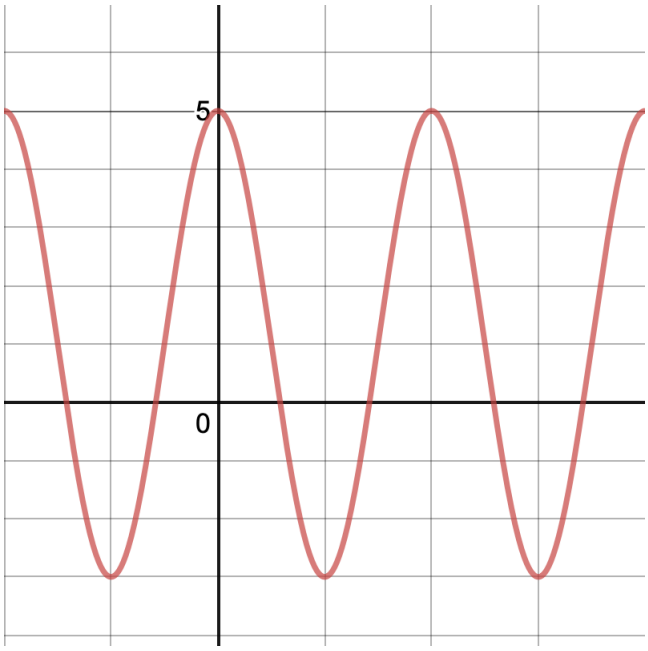

Figure 1: Function graph for $f(x)$

1. [28T] Write a function equation for f of the form $a\sin(b(x-h))+k$.

2. [28T] Write a function equation for f of the form $a\cos(b(x-h))+k$.

3. [25T] Calculate the area of a sector that is cut out by an angle of 200° in the circle of radius 10. Leave your answer exact. Do not round. Show all work.

4. [23F] Given a function $h(x) = \log_3(x)$ and $k(x) = 2\log_3(4(x-5)) + 7$. Describe how to get the graph of $k(x)$ from the graph of $h(x)$. Be very precise about the order of the transformation and the unit of each transformation.

5. [21F] Given the function $f(x) = \dfrac{x^2+1}{x^3+x^2-1}$, write down the interval(s) that the function $f(x)$ is decreasing.

6. [24T] Convert $\frac{7\pi}{12}$ rad to degree. Leave your answer exact. Do not round. Show all work.

7. [27T] Let α be angle such that $\sec(\alpha) = 3$. If we also know that $\sin(\alpha) < 0$, find $\cot(\alpha)$. Leave your answer exact. Do not round. Show all work.