

# MAT 151 Quiz 14

Apr. 30, 2020

For the next question, use the following Figure 1.

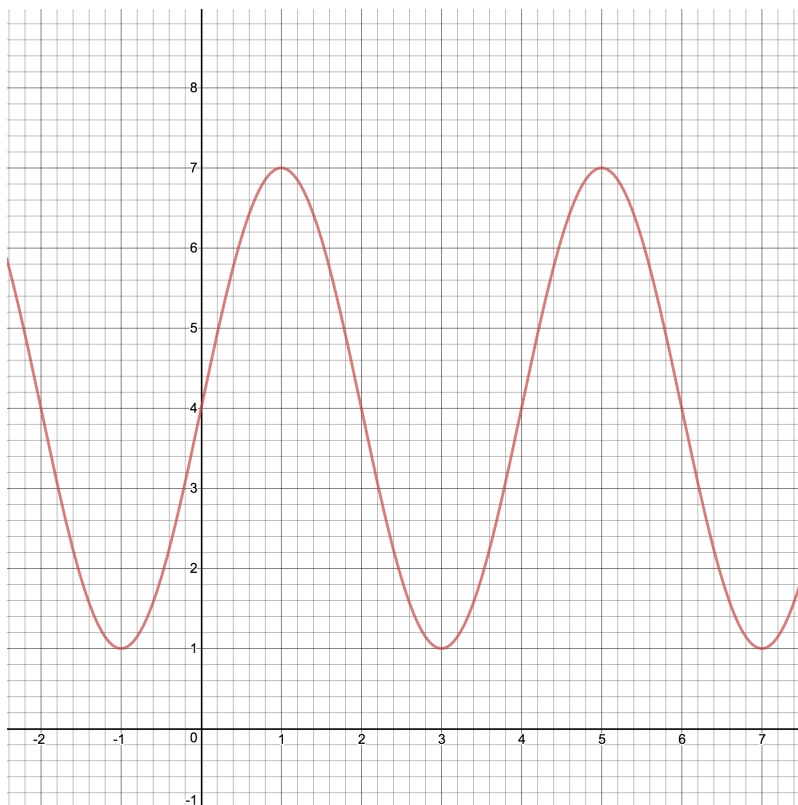


Figure 1: Function graph for  $f(x)$

1. 28T Write a function equation for the function in the following form  $f(x) = a \sin(b(x - h)) + k$ .

2. 28T Write a function equation for the function in the following form  $f(x) = a \cos(b(x - h)) + k$ .

3. 29T Simplify  $\cos(\arcsin(-1/3))$ .

4. 29T Simplify  $\sin(\arctan(-3))$ .

5. 30T Prove the trigonometric identity

$$\frac{\tan^2(\theta)}{\sec(\theta)} = \sin(\theta) \tan(\theta).$$

6. 30T Prove the trigonometric identity

$$\cos(x) + \sin(x) \tan(x) = \sec(x)$$

7. 23F Given a function  $h(x) = e^x$  and  $k(x) = -3e^{\frac{1}{2}(x+3)} - 6$ . 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.
8. 25T Find the arc length of the arc of a circle of radius 4 that travels from 4 o'clock to 10 o'clock in the clockwise direction.