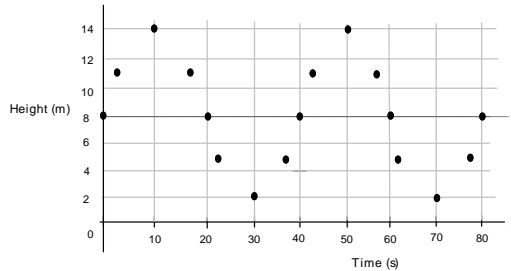


EXAM REVIEW

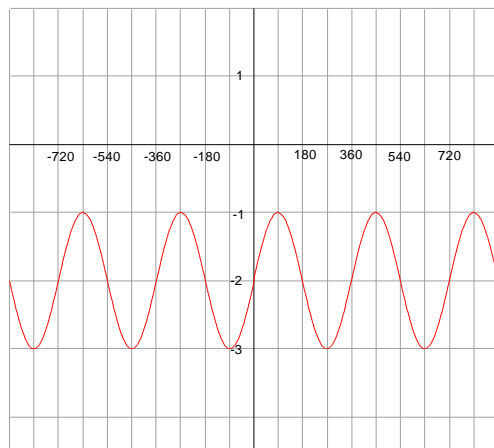
CHAPTER 6: Sinusoidal Functions

1. Information about the movement of a Ferris wheel is shown below.



- How long does it take for the Ferris wheel to make five complete rotations?
- What is the height of the axle supporting the Ferris wheel?
- Calculate the speed at which the wheel is rotating.

2. Given the following graph, complete the given analysis.



Amplitude: _____

Period: _____

Range: _____

Number of cycles from -540 to 540: _____

Axis: _____

3. Describe the transformation $g(x) = -2\sin x + 1$ and then sketch it.

4. What is the range for each of the following sinusoidal functions?

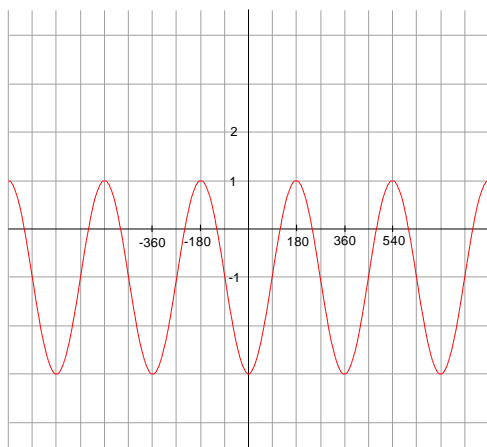
(a) $f(x) = 0.5\sin x - 4$

(b) $f(x) = \sin(x - 180^\circ)$

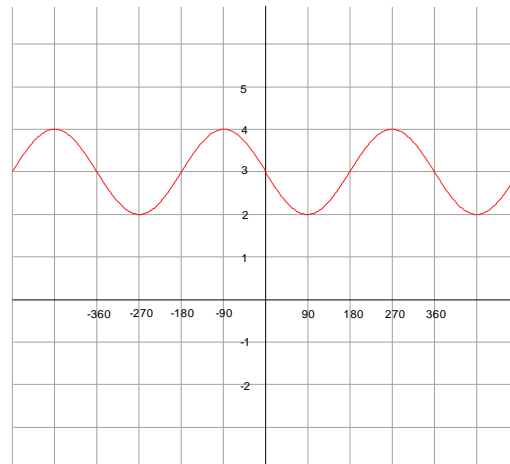
5. The function $f(x) = \sin x$ has been translated 60° to the right, vertically stretched by a factor of 3 and reflected in the x-axis. Write the new equation.

6. Write the equation for the sinusoidal function.

(a)



(b)



7. Complete the chart below.

<i>Sinusoidal Function</i>	<i>Maximum</i>	<i>Minimum</i>
(a) $f(x) = 3 \sin x$		
(b) $f(x) = -\sin(x - 45^\circ) + 6$		
(c) $f(x) = -0.25 \sin x - 1.5$		

8. The height of a Ferris wheel is modeled by the function $h(x) = 6 \sin(x - 45^\circ) + 7$, where $h(x)$ is in metres and x is the number of degrees the wheel has rotated from the boarding position of a rider.

(a) Sketch the curve (on graph paper).

(b) When the rider has rotated 400° from the boarding position, how high above the ground is the rider?

9. Sketch each sinusoidal function.

(a) $f(x) = 2 \sin(x - 90^\circ)$

(b) $f(x) = 0.5 \sin(x - 60^\circ) - 2$