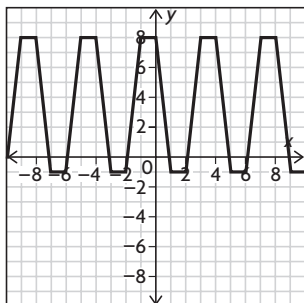


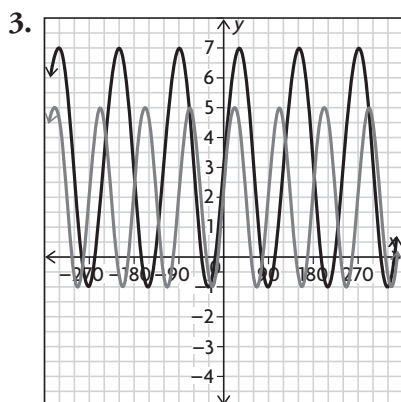
Chapter 6 Review Extra Practice

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1. The following graph represents a periodic function.



- What is the period of the function?
 - What will be the value of y when $x = 50$?
 - What will be the value of y when $x = 67$?
 - At $x = 87.5$, will y be positive, negative, or zero?
2. Carlos is standing directly west of a circular go-cart track with a radius of 125 m. He is standing 10 m away from the track. A sinusoidal graph is drawn representing the distance east of Carlos of one of the go-carts as a function of distance travelled. State the period, amplitude, and equation of the axis of the graph.



For the graphs above, which of the following differ: period, amplitude, equation of the axis?

- Determine the correct function for each of the following transformations.
 - The function $f(x) = \sin x$ has been moved 70° to the right.
 - The function $f(x) = \sin x$ has been moved 33 units down.
 - The function $f(x) = \sin x$ has been moved 1.5° to the left.

- The function $f(x) = \sin x$ has been moved 51 units up.
- The function $f(x) = \sin x$ has been moved 45 units down and 61° to the right.
- The function $f(x) = \sin x$ has been moved 38 units up and 78° to the left.

5. State the amplitude, period, equation of the axis, domain, and range of each of the following functions.

- $f(x) = \frac{18}{19} \sin(x + 3^\circ) + 39$
- $f(x) = -80 \sin(x - 89.5^\circ) - 29$
- $f(x) = \frac{1}{44} \sin(x + 44^\circ) - 44$
- $f(x) = -26.5 \sin(x - 53^\circ) - 26.5$
- $f(x) = -\frac{5}{7} \sin(x + 7^\circ) + 5$
- $f(x) = 99 \sin(x - 98^\circ) + 97$

6. Determine whether or not the following transformations have been applied in the correct order.

- The function $f(x) = \sin x$ has been moved 14.5 units down, vertically compressed by a factor of $\frac{9}{10}$, and moved 35° to the right.
- The function $f(x) = \sin x$ has been moved 52° to the left, moved 12 units up, and vertically stretched by a factor of 91.
- The function $f(x) = \sin x$ has been moved to the right, vertically compressed by a factor of $\frac{2}{35}$, reflected in the x -axis, and moved 2 units down.
- The function $f(x) = \sin x$ has been vertically stretched by a factor of 22, reflected in the x -axis, and moved 21.5 units up.
- The function $f(x) = \sin x$ has been moved 66 units down, reflected in the x -axis, and vertically stretched by a factor of 40.