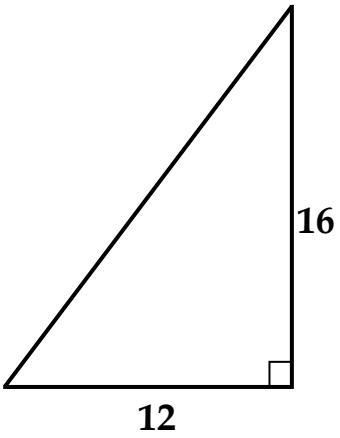
Patterning - Winter
Quiz 6

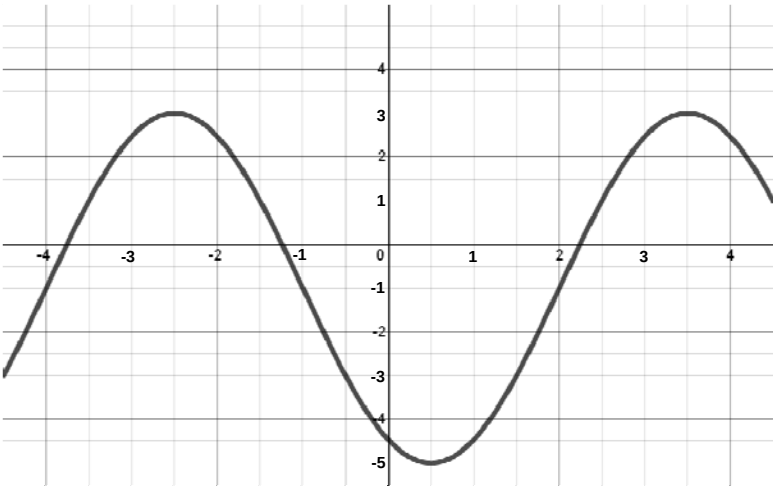
Name:_____

**For each question (except fill in the blank questions), your solution must show work/calculations and display/explain your reasoning.**

1. Consider the right triangle shown, with two known side lengths. Determine the third side length and the two unknown angles and clearly label them on the figure.




2. The following graph is described by a **sine** function.




The amplitude is: _____

The period is: _____

The horizontal shift is: _____
(give the smallest horizontal shift)

The midline is $y =$ : _____

3. A ferris wheel that is 30 meters in diameter completes 1 full revolution in 5 minutes moving at constant angular speed. The bottom of the ferris wheel is 2 meters above the ground. At $t = 0$ minutes, you are at the very top of the ferris wheel, which then continues without stopping. The function $h(t)$ gives your height in meters above the ground $t$ minutes after you were at the top. Write down a formula for $h(t)$.

4. Consider the function $6\sin(2\theta) = 3$

a) Find the smallest positive solution to $6\sin(2\theta) = 3$.

b) Find the next largest solution to $6\sin(2\theta) = 3$.