

Name _____
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Date _____
Algebra II

Graphing Sinusoidal Curves With Phase Shifts

1. Relative to the graph of $y = 3 \sin x$, what is the shift of the graph of $y = 3 \sin\left(x + \frac{\pi}{3}\right)$?

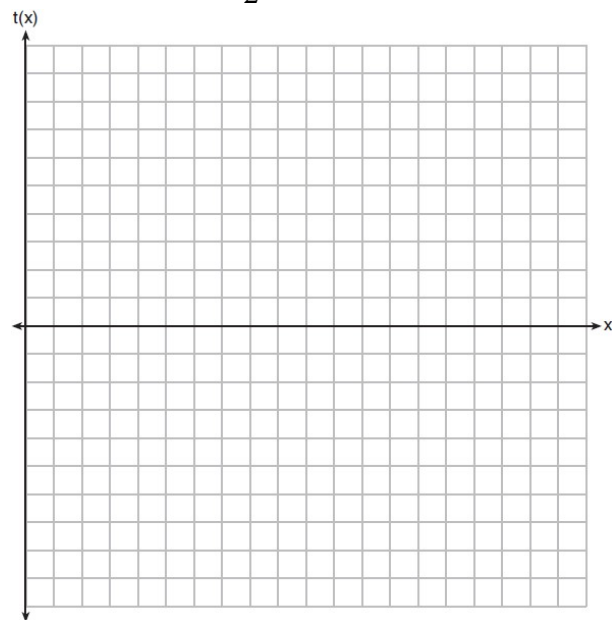
- 1) $\frac{\pi}{3}$ right
- 2) $\frac{\pi}{3}$ left
- 3) $\frac{\pi}{3}$ up
- 4) $\frac{\pi}{3}$ down

2. Given the parent function $p(x) = \cos x$, which phrase best describes the transformation used to obtain the graph of $g(x) = \cos(x + a) - b$, if a and b are positive constants?

- 1) right a units, up b units
- 2) right a units, down b units
- 3) left a units, up b units
- 4) left a units, down b units

Graph one cycle of the following functions

3. $t(x) = 3 \sin\left(x - \frac{\pi}{2}\right) + 1$



4. $f(x) = -2 \cos \frac{1}{2}(x + 2\pi) - 3$

