

§4.6C: Writing Trigonometric Functions
“I WILL...
...write trigonometric functions”

I. Steps

- A. Identify the amplitude (A) ($|\text{above point}| + |\text{below point}|/2$)
- B. Identify the period (B)
 1. Find the length of the curve to get the period
- C. Identify the horizontal shift (C) for sine and cosine and move over the parent function
- D. Identify the vertical shift (D) by drawing a horizontal line cutting the graph in half

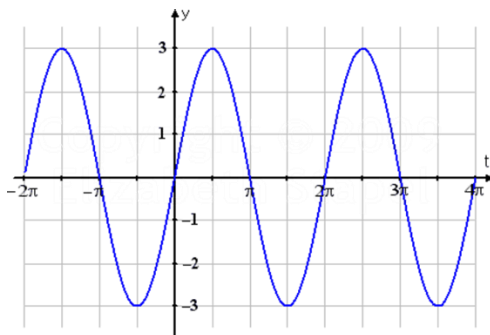
Ex 1: Write an equation using $y = \sin x$ where $a = 2$, period is π , phase shift is right $\frac{\pi}{2}$ and vertical shift is up 1.

Ex 2: Write an equation using $y = \cos x$ where $a = 3$ reflected across the x -axis, period is 2π , phase shift is $\frac{\pi}{2}$ to the right and vertical shift is down 1.

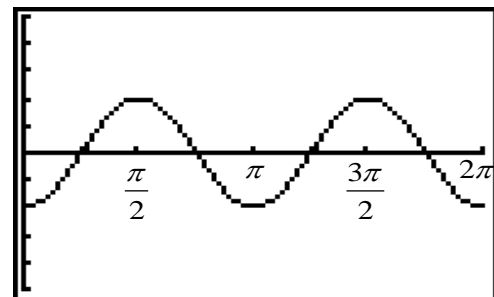
Ex 3: Write an equation using $y = \tan x$ where $a = 4$, period is $\frac{\pi}{2}$, phase shift is $\frac{\pi}{6}$ to the left.

Your Turn: Write an equation using $y = \cos x$ where the amplitude is 4, period is $\frac{\pi}{2}$, and phase shift is $\frac{\pi}{24}$ to the left and one unit down

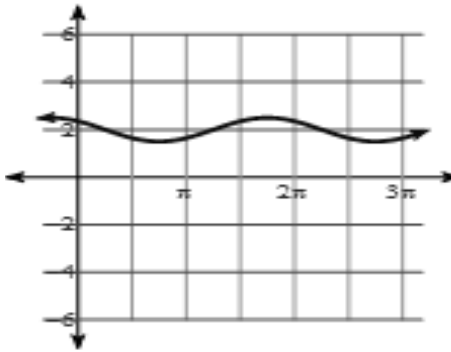
Ex 4: Write the equation of the graph below using a sine and cosine function



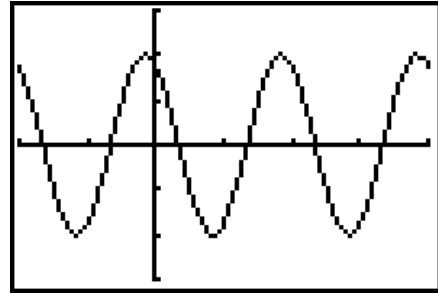
Ex 5: Write the equation of the graph below using a sine and cosine function



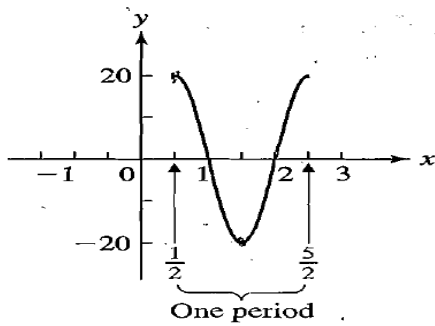
Ex 6: Write the equation of the graph below using a sine and cosine function



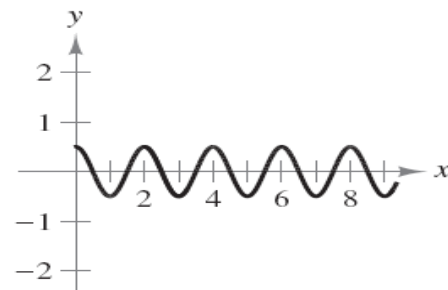
Your Turn: Write the equation of the graph below using a sine and cosine function



Ex 7: Write the equation of the graph below using a cosine function



Ex 8: Write the equation of the graph below using a cosine function



Your Turn: Write the equation of the graph below using a cosine function

