

Name: _____

Date: _____

Learning Goal 5.1	Graphing primary trigonometric functions, including transformations and characteristics
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More Questions – Solutions

1. Complete the table for each of the following functions.

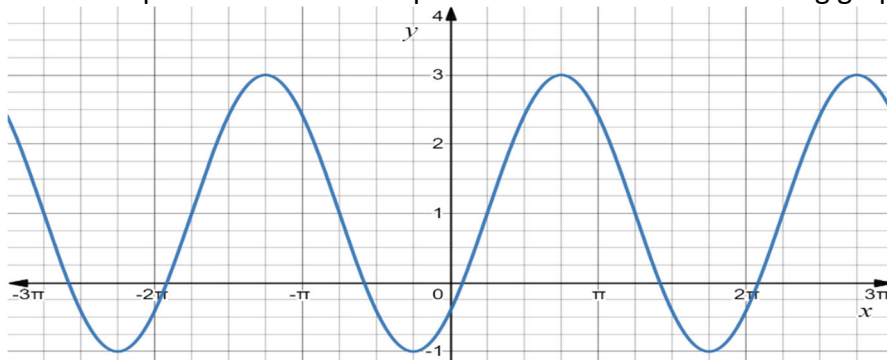
Function	Period	Amplitude	Vertical Displacement	Phase Shift	Maximum	Minimum
$y = \sin\left(x - \frac{\pi}{6}\right) - 3$	2π	1	3 ↓	$\frac{\pi}{6} \rightarrow$	-2	-4
$y = \sin\left(x - \frac{3\pi}{8}\right) + 5$	2π	1	5 ↑	$\frac{3\pi}{8} \rightarrow$	6	4
$y = 2 \sin\left(x + \frac{2\pi}{3}\right) - 1$	2π	2	1 ↓	$\frac{2\pi}{3} \leftarrow$	1	-3
$y = \cos x - 4$	2π	1	4 ↓	none	-3	-5
$y = \cos\left(x - \frac{\pi}{4}\right) + 2$	2π	1	2 ↑	$\frac{\pi}{4} \rightarrow$	3	1
$y = \frac{1}{2} \cos\left(x + \frac{5\pi}{2}\right) + 7$	2π	$\frac{1}{2}$	7 ↑	$\frac{5\pi}{2} \leftarrow$	$\frac{13}{2}$	$\frac{15}{2}$

2. Complete the table below.

Function	Period	Amplitude	Vertical Displacement	Phase Shift	Max.	Min.	Equation
sin	2π	$\frac{1}{3}$	1 ↑	$5 \rightarrow$	$\frac{4}{3}$	$\frac{2}{3}$	$y = \frac{1}{3} \sin(x - 5) + 1$
cos	2π	3	2 ↑	$\frac{\pi}{2} \rightarrow$	5	-1	$y = 3 \cos\left(x - \frac{\pi}{2}\right) + 2$
sin	4π	3	$\frac{2}{3} \downarrow$	none	$\frac{7}{3}$	$-\frac{11}{3}$	$y = 3 \sin \frac{1}{2}x - \frac{2}{3}$
cos	π	2	2 ↓	$30^\circ \leftarrow$	0	-4	$y = 2 \cos 2\left(x + \frac{\pi}{6}\right) - 2$

3. Write a sine equation and cosine equation for each of the following graphs.

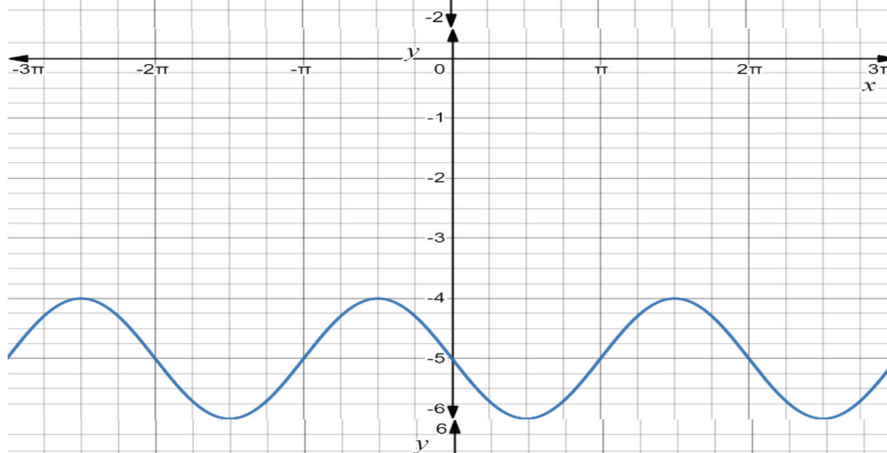
a.



$$y = 2 \sin\left(x - \frac{\pi}{4}\right) + 1$$

$$y = 2 \cos\left(x - \frac{3\pi}{4}\right) + 1$$

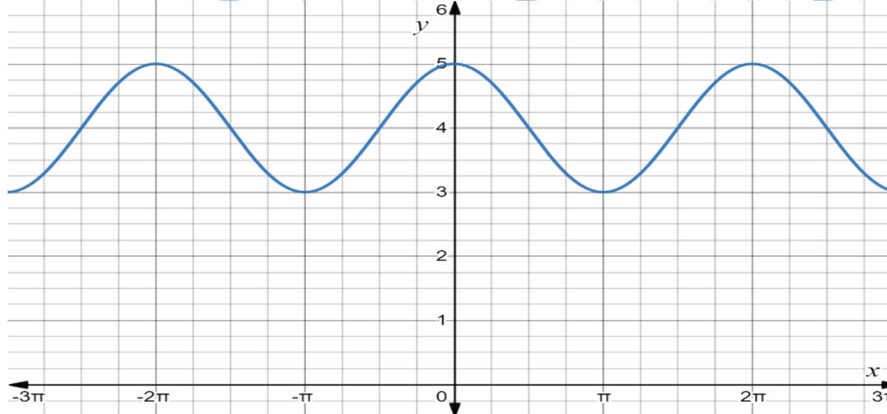
b.



$$y = \sin(x - \pi) - 5$$

$$y = \cos\left(x + \frac{\pi}{2}\right) - 5$$

c.



$$y = \sin\left(x + \frac{\pi}{2}\right) + 4$$

$$y = \cos x + 4$$