

F.S.T.
Homework 4-8

Name: _____
Block: _____

For each function in questions 1-3, list the following:

- a) Amplitude
- b) Period
- c) Phase Shift
- d) Vertical Shift

Then, graph **one period** of the parent function **and** the translated function. Be sure to label both axes with the scale you used.

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

2. $y = \cos x + 3$

3. $y = \tan x - 1$

4. $y = \cos(x - \pi)$

5. $y = \cos x - 1$

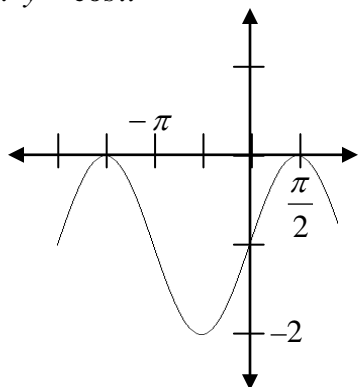
6. $y = \tan\left(x - \frac{\pi}{3}\right) + 2$

7. $y = \sin\left(x - \frac{\pi}{6}\right) + 3$

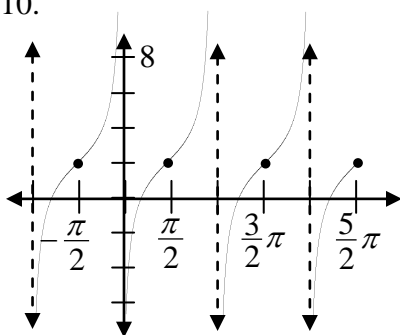
8. $y = \sin\left(x + \frac{\pi}{2}\right) - 1$

In questions 9-11, list the amplitude, period, phase shift, and vertical shift. Then, write the equation of the given graph using the indicated parent function.

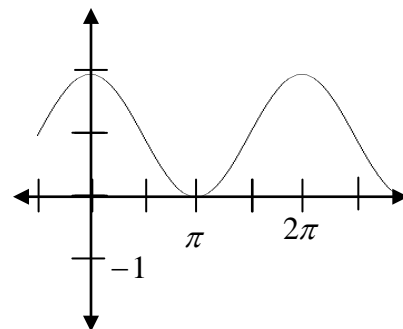
9. $y = \cos x$



10.



11. $y = \sin x$



12. Given the function $y = \sin x$...

a) Find the equation of the image under the transformation $(x, y) \rightarrow (x - \pi, y + 4)$.

b) Graph the parent and the image on the same set of axes. List the amplitude, period, phase shift and vertical shift of both the parent and the image.

13. Given the function $y = \cos x$...

a) Find the equation of the image under the transformation $(x, y) \rightarrow \left(x + \frac{\pi}{4}, y - 3\right)$.

b) Graph the parent and the image on the same set of axes. List the amplitude, period, phase shift and vertical shift of both the parent and the image.