F.S.T. **Name _____**

Homework 4-9 **Block _____**

For each function in questions 1-8, list the following:

a) Amplitude (if applicable)
b) Period
c) Phase Shift
d) Vertical Shift

Then, graph one period of each function. Label both axes with the scale you used.

1. $y = 2\sin(x+\pi)$

2. $y = \tan(2x)+5$

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

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

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

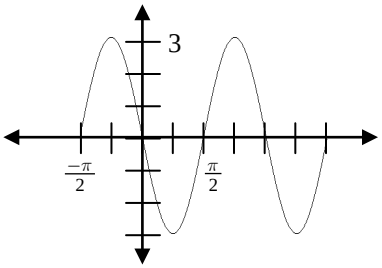
6. $y = \sin\left(\frac{1}{4}\left(x+\frac{\pi}{2}\right)\right)-1$

7. $y = \cos\left(3\left(x + \frac{2\pi}{3}\right)\right) + 5$

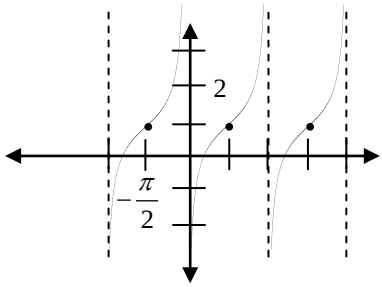
8. $y = 3\sin\left(4\left(x + \frac{\pi}{4}\right)\right) - 2$

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

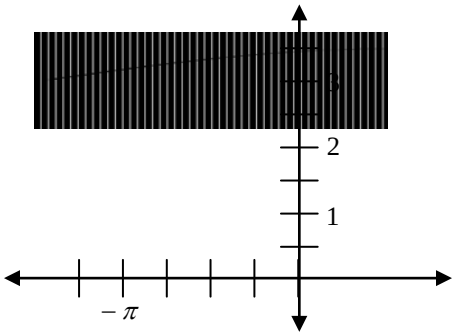
9. $y = \sin x$



10. $y = \tan x$



11. $y = \sin x$



12. $y = \cos x$