

Graphing Trig Functions # 1

Sine, Cosine, Tangent

Name: _____

Date: _____ Block: _____

I. Graph the following on separate paper. Hint: Show work for amplitude, period, and unit.

1) $y = \cos(4x)$

2) $f(x) = 5 \tan(2x)$

3) $y = 2 \sin(3x)$

4) $f(x) = \cos(3x)$

II. Graph the following on separate paper. Hint: Show work for amplitude, period, unit, and phase shift.

5) $y = \cos(3x + 2\pi)$

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

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

8) $y = -5 \tan(x - \pi)$

III. Graph the following on separate paper. Hint: Show work for amplitude, period, unit, phase shift, and vertical shift.

9) $y = \cos\left(x + \frac{\pi}{4}\right)$

10) $y = -2 \tan(4x - \pi) + 1$

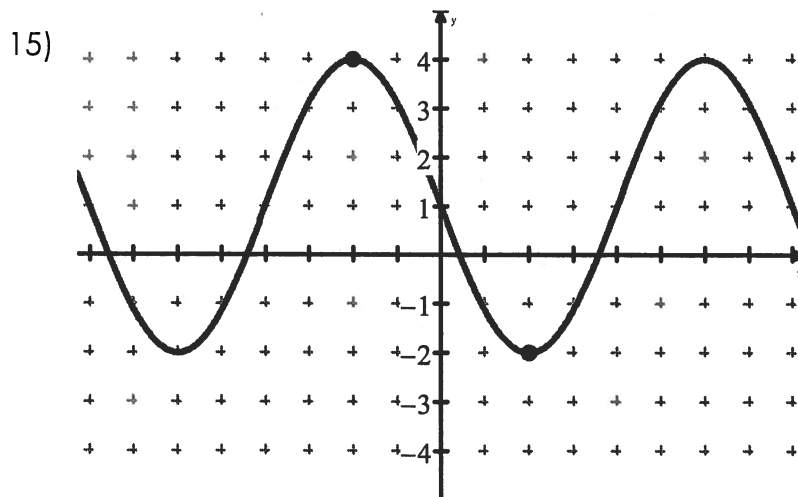
11) $y = -\cos\left(\frac{1}{4}x - \pi\right) - 1$

12) $y = 5 \sin(x - \pi) + 2$

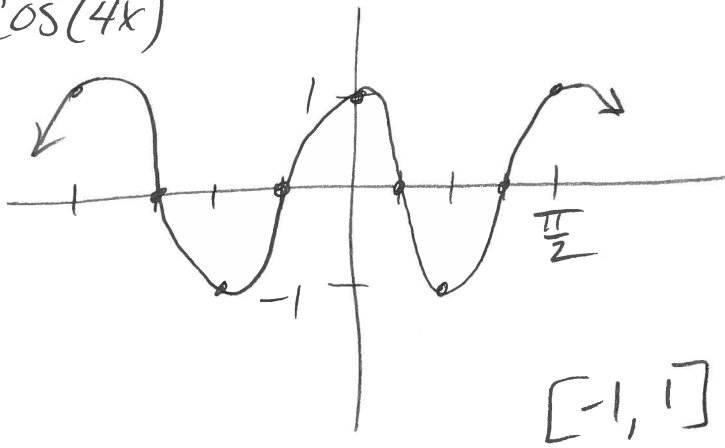
13) $f(x) = -4 \cos(2x + \pi) - 1$

14) $f(x) = 5 \cos(4x + \pi) + 1$

IV. Write 2 different equations for the function graphed below.



1. $y = \cos(4x)$



Amp = 1

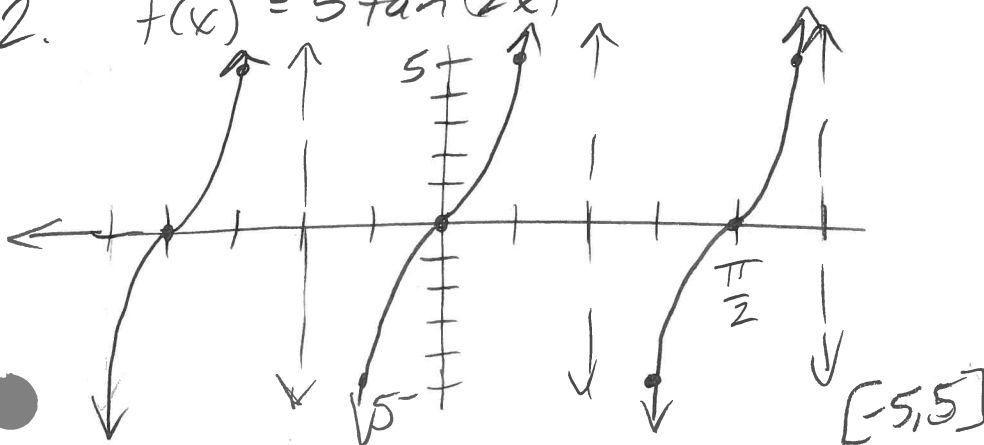
Period = $\frac{2\pi}{4} = \frac{\pi}{2}$

Unit = $\frac{\pi}{8}$

Phase = $4x = 0$
 $x = 0$

Vertical = 0

2. $f(x) = 5 \tan(2x)$



Amp = 5

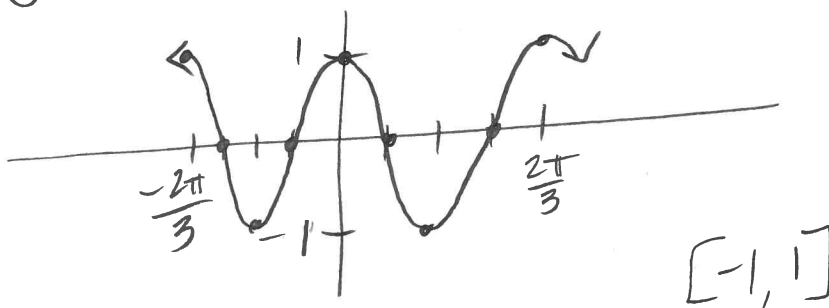
Period = $\frac{\pi}{2}$

Unit = $\frac{\pi}{8}$

Phase = $2x = 0$
 $x = 0$

Vertical = 0

3. $y = \cos(3x + 2\pi)$



Amp = 1

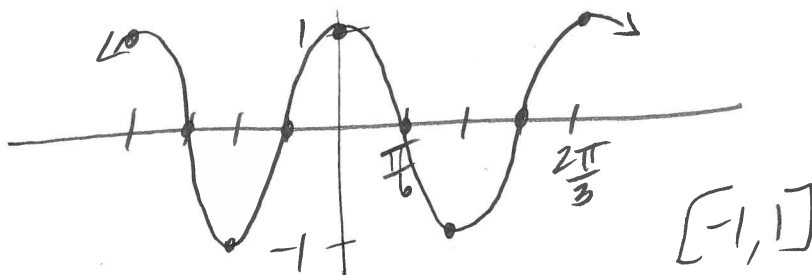
Period = $\frac{2\pi}{3}$

Unit = $\frac{2\pi}{12} = \frac{\pi}{6}$

Phase: $3x + 2\pi = 0$
 $x = -\frac{2\pi}{3}$

Vertical = 0

4. $f(x) = \cos(3x)$



Amp = 1

Period = $\frac{2\pi}{3}$

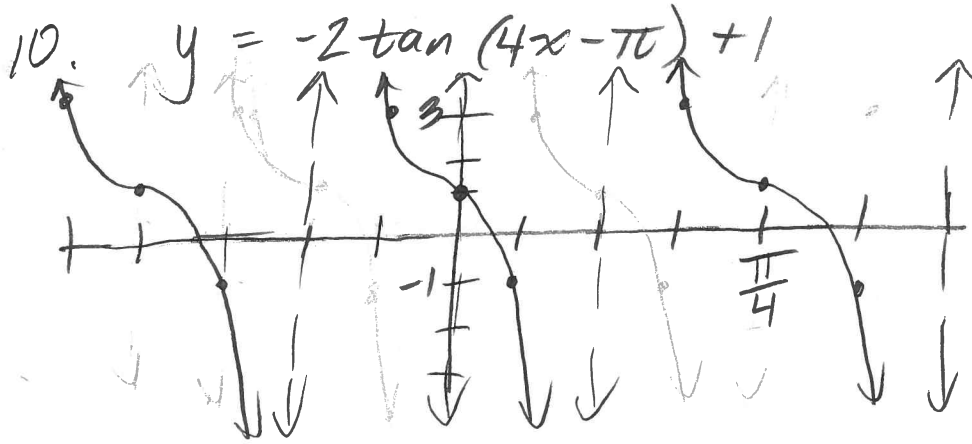
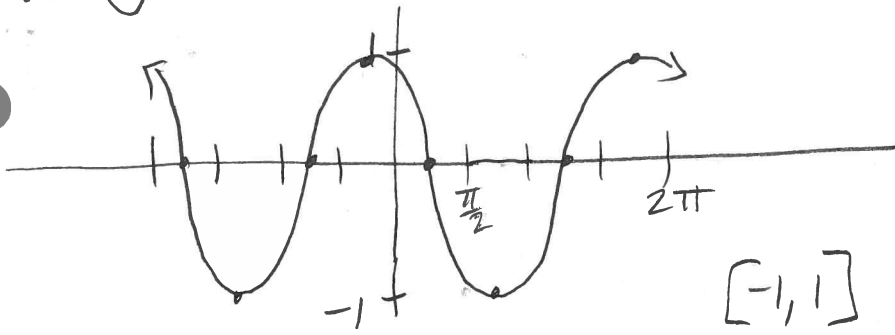
Unit = $\frac{2\pi}{12} = \frac{\pi}{6}$

Phase = 0

Vertical = 0

9. $y = \cos(x + \frac{\pi}{4})$

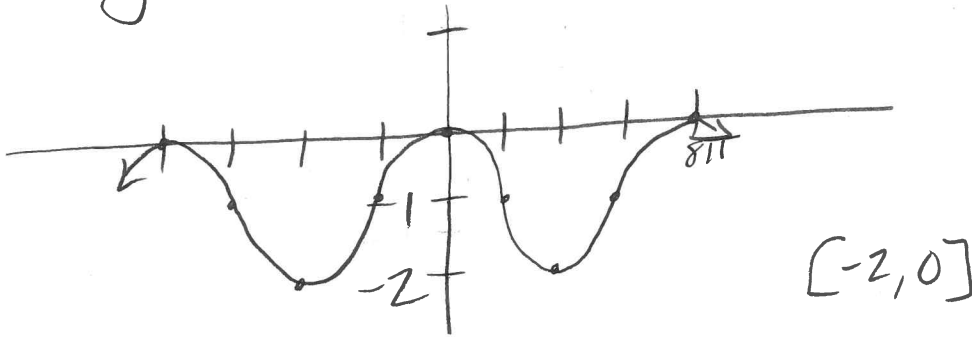
Amp = 1
 Period = 2π
 Unit = $\frac{2\pi}{4} = \frac{\pi}{2}$
 Phase = $-\frac{\pi}{4}$
 Vertical = 0



Amp = -2
 Period = $\frac{\pi}{4}$
 Unit = $\frac{\pi}{16}$
 Phase = $\frac{\pi}{4}$
 Vertical = 1

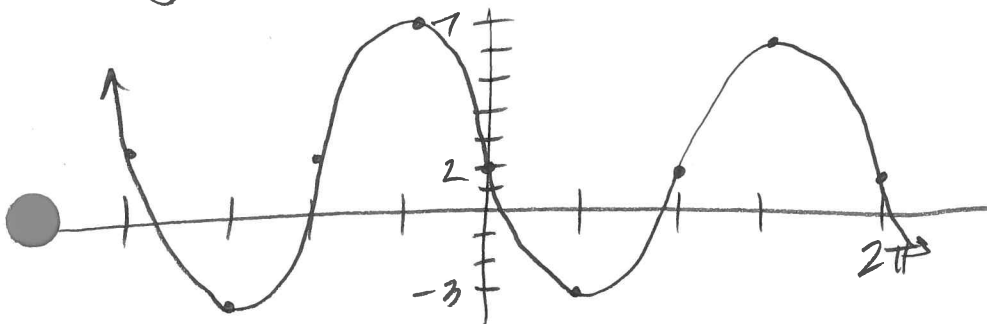
11. $y = -\cos(\frac{1}{4}x - \pi) - 1$

reflect ← Amp = -1
 Period = $\frac{2\pi}{1/4} = 8\pi$
 Unit = 2π
 Phase = $\pi/4 = 4\pi$
 Vertical = -1



12. $y = 5 \sin(x - \pi) + 2$

Amp = 5
 Period = $\frac{2\pi}{1}$
 Unit = $\frac{2\pi}{4} = \frac{\pi}{2}$
 Phase = π
 Vertical = 2



$[-3, 7]$