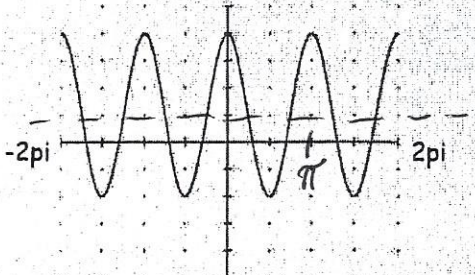
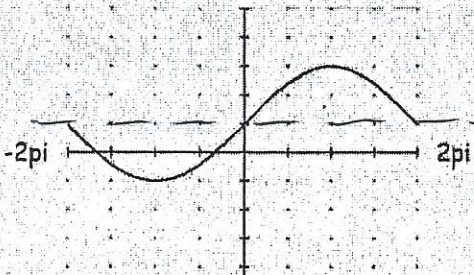


LEARNING TARGET: I can identify key features given a graph/equation.

<p>1. What information does the period tell us? <i>length of one cycle or wavelength</i></p>	<p>2. What information does the b-value tell us? <i>how many wavelengths in 2π</i></p>
<p>3. Find the period of each function.</p>	
<p>a) $y = -3\cos(5x)$ period = <u>$\frac{2\pi}{5}$</u></p>	<p>b) $y = 2\sin\left(\frac{x}{6}\right) + 2$ period = <u>12π</u></p>
<p>c) $y = -\cos\left(\frac{\pi x}{4}\right)$ period = <u>8</u></p>	<p>c) $y = 4\sin(3\pi x - 2\pi)$ period = <u>$\frac{2}{3}$</u></p>
<p>4. Find the following information about the function: $y = -4\sin(3x - \pi) + 2$</p> <p>amplitude: <u>4</u> period: <u>$\frac{2\pi}{3}$</u> phase shift: <u>$\frac{\pi}{3}$</u> vertical shift: <u>2</u> reflection? <u>(YES)</u> / NO</p>	<p>5. Find the following information about the function: $y = 3\cos(4\pi x + \pi)$</p> <p>amplitude: <u>3</u> period: <u>$\frac{1}{2}$</u> phase shift: <u>$-\frac{1}{4}$</u> vertical shift: <u>none</u> reflection? YES / <u>(NO)</u></p>
<p>6. Find the following information about the function:</p>  <p>amplitude: <u>3</u> period: <u>π</u> vertical shift: <u>2</u> b-value: <u>2</u></p>	<p>7. Find the following information about the function:</p>  <p>amplitude: <u>2</u> period: <u>4π</u> vertical shift: <u>1</u> b-value: <u>$\frac{1}{2}$</u></p>

STUDENT RATING: _____

4 = I can teach this to someone 3 = I can do it but not teach it 2 = I can do with some help 1 = I can do with a lot of help

LEARNING TARGET: I can write multiple equations given a graph.

I use $y = a \text{ "trig" } (b(x-c)) + d$

1. Write an equation of a ~~cosine~~ function given the following:

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

amplitude = 2 period = 6π $6\pi = \frac{2\pi}{b}$ $b = \frac{1}{3}$
 vertical shift = down 3 phase (horizontal) shift = 3π

2. Write an equation of a ~~sine~~ function given the following:

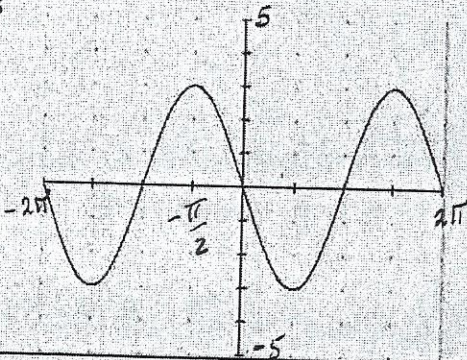
$$y = -\sin 8(x + 1) - 3$$

amplitude = 1 period = $\frac{\pi}{4} = \frac{2\pi}{b}$ $b = 8$ **reflection**
 vertical shift = down 3 phase (horizontal) shift = Left 1

3. Write two equivalent equations for the following graphs.

$$y = -3 \sin x \qquad y = 3 \cos(x + \frac{\pi}{2})$$

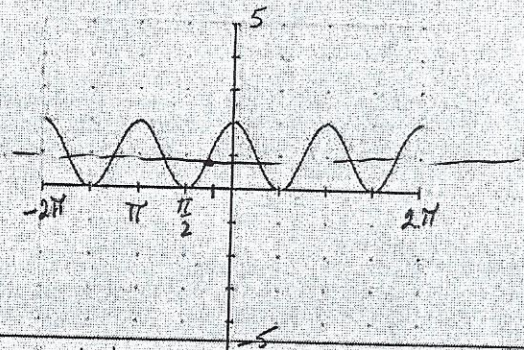
amp = 3
no vs



4. Write two equivalent equations for the following graph.

$$y = \sin(2x + \frac{\pi}{4}) + 1 \qquad y = \cos(2x) + 1$$

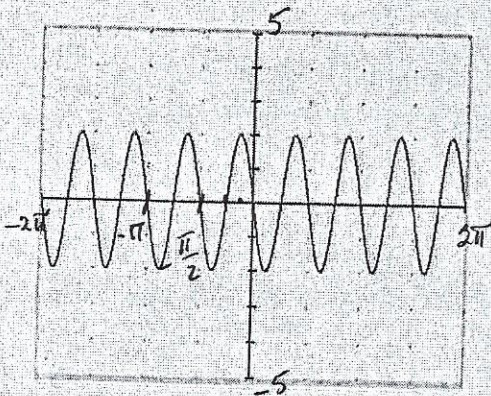
amp = 1
vs = 1
b = 2



5. Write two equivalent equations for the following graph.

$$y = -2 \sin(4x) \qquad y = 2 \cos(4(x + \frac{\pi}{8}))$$

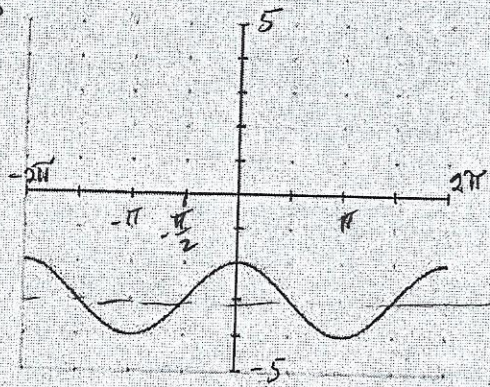
amp = 2
b = 4
no vs



6. Write two equivalent equations for the following graph.

$$y = \sin(x + \frac{\pi}{2}) - 3 \qquad y = \cos x - 3$$

amp = 1
per = 2π b = 1
vs = 3

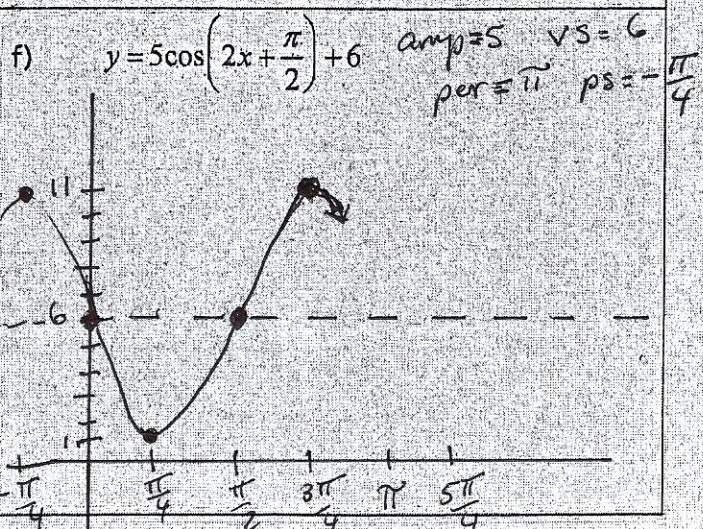
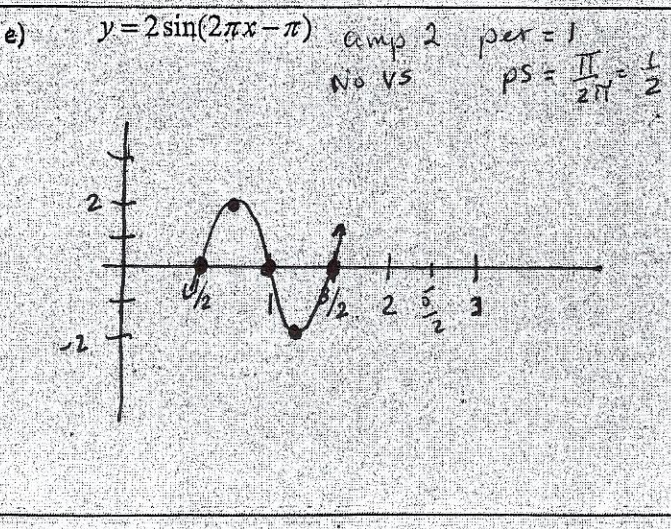
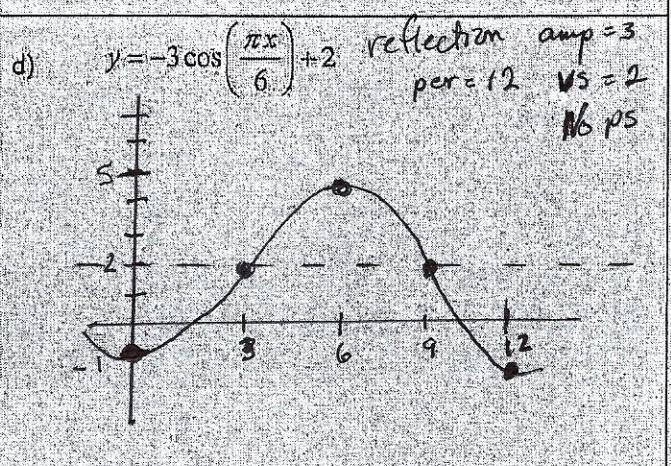
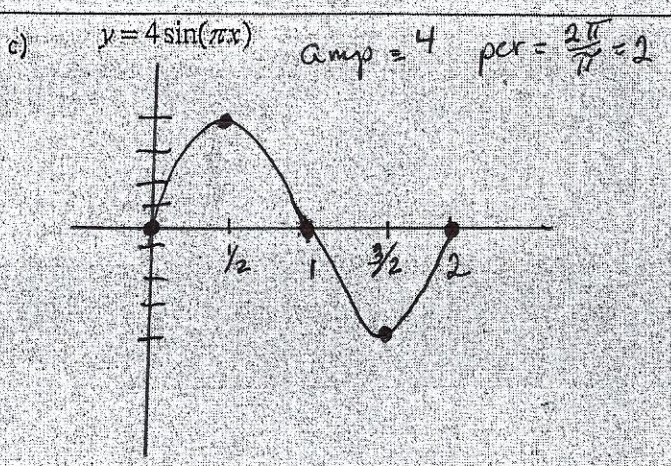
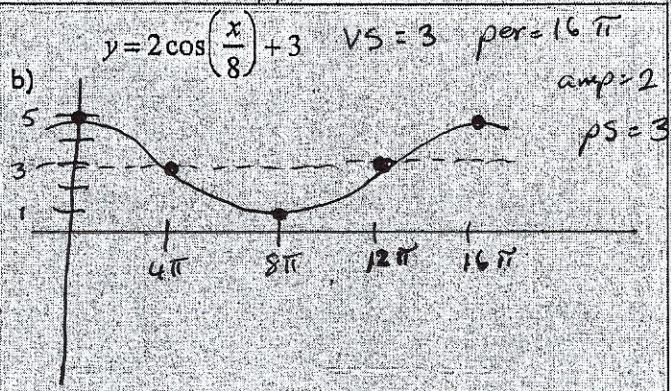
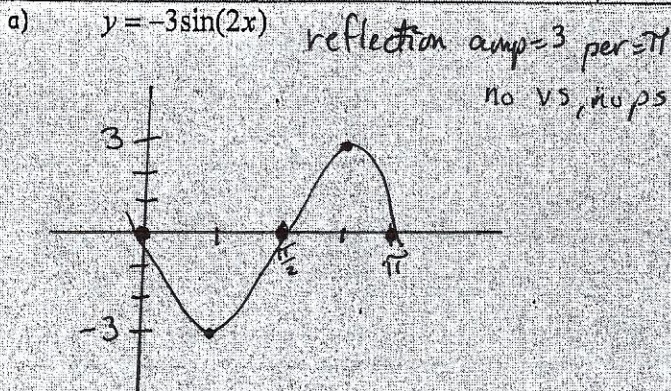


STUDENT RATING: _____

4 = I can teach this to someone 3 = I can do it but not teach it 2 = I can do with some help 1 = I can do with a lot of help

LEARNING TARGET: I can graph sine and cosine functions.

Directions: Sketch a graph of one cycle for each equation. Be sure to label all key points.



STUDENT RATING: _____

4 = I can teach this to someone 3 = I can do it but not teach it 2 = I can do with some help 1 = I can do with a lot of help

Directions: Match each graph to the appropriate equation.

Window for each graph:

x min: -2π x max: 2π
 y min: -5 y max: 5

NO CALCULATORS!!!

G 1) $y = 4 \cos(2x)$

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

C 3) $y = \sin(4x)$

F 4) $y = 3 \cos(2x) + 1$

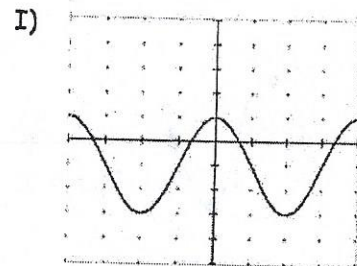
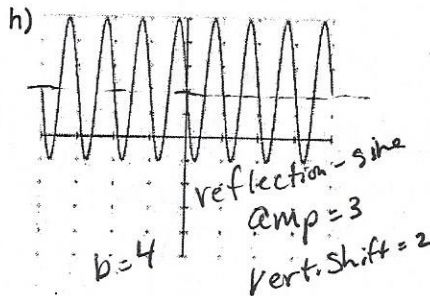
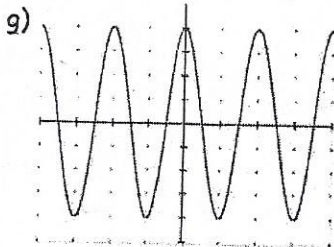
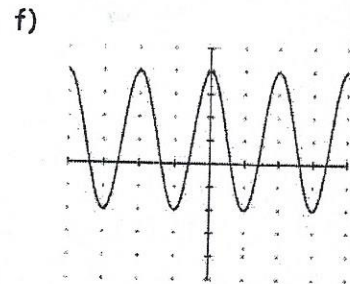
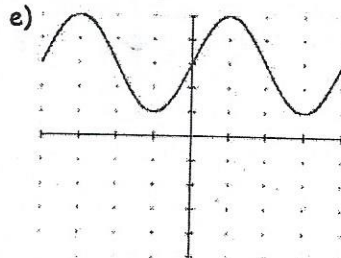
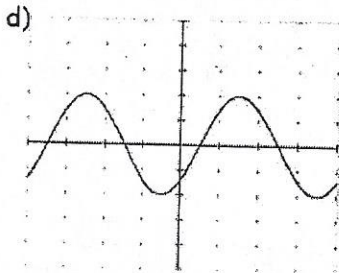
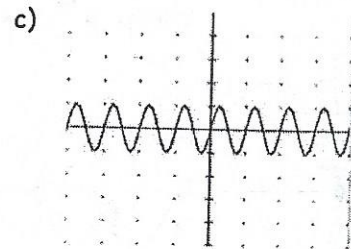
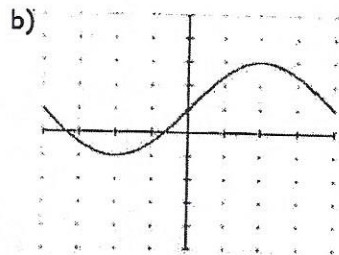
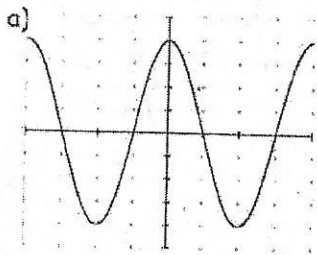
D 5) $y = 2 \sin\left(x - \frac{\pi}{4}\right)$

B 6) $y = 2 \sin\left(\frac{x}{2}\right) + 1$

I 7) $y = 2 \cos(x) - 1$

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

***NOT SURE WHERE TO START??? TRY LISTING OUT THE KEY FEATURES FOR THE GRAPHS OR EQUATIONS!



Write an equation for the graph you didn't use above: GRAPH H: $y = -3 \sin(4x) + 2$

STUDENT RATING: _____ (answers may vary)

4 = I can teach this to someone 3 = I can do it but not teach it 2 = I can do with some help 1 = I can do with a lot of help