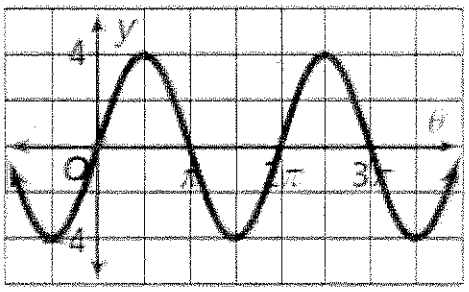
PC – Trig

Name KEY

WRITING EQUATIONS FOR TRIGONOMETRIC FUNCTIONS

Find the period, amplitude, and shifts. Then write a function for each graph.
NOTE: If the scale is not marked on the graph, assume that each line on the x-axis is $\frac{\pi}{4}$.

1)

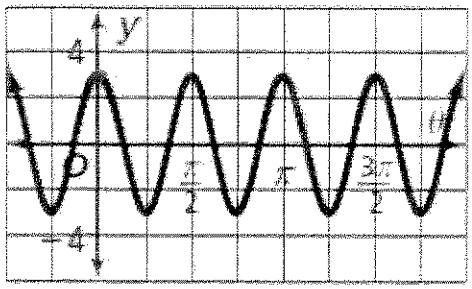


Period: 2π Horizontal Shift: NA

Amplitude: 4 Vertical Shift: NA

Equation: $4\sin\theta$

2)

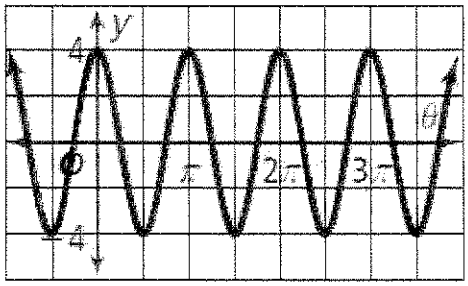


Period: $\frac{2\pi}{2}$ Horizontal Shift: NA $\frac{2\pi}{b} = \frac{\pi}{2}$

Amplitude: 3 Vertical Shift: NA

Equation: $3\cos 4\theta$

3)

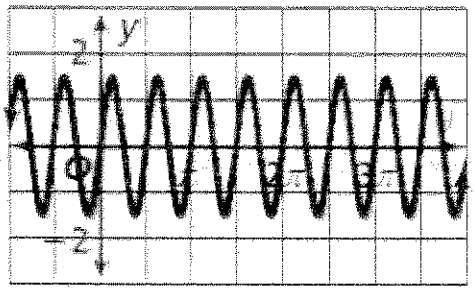


$\frac{2\pi}{b} = \pi$ Period: π Horizontal Shift: NA

Amplitude: 4 Vertical Shift: NA

Equation: $4\cos 2\theta$

4)

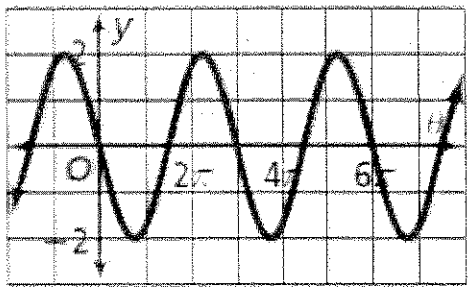


Period: $\frac{\pi}{2}$ Horizontal Shift: NA $\frac{\pi}{2} = \frac{2\pi}{b}$

Amplitude: 1.5 Vertical Shift: NA

Equation: $1.5\sin 4\theta$

5)



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

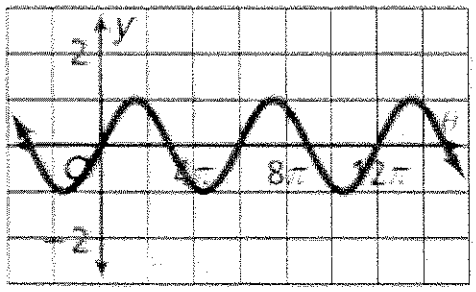
Period: 3π Horizontal Shift: NA

Amplitude: 2 Vertical Shift: NA

Equation: $-2\sin\frac{2}{3}\theta$

A negative will reflect over x-axis

6)



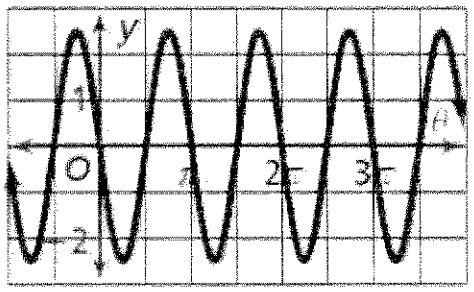
Period: 6π Horizontal Shift: NA

Amplitude: 1 Vertical Shift: NA

Equation: $\sin\frac{1}{3}\theta$

$\frac{2\pi}{b} = 6\pi$

7)



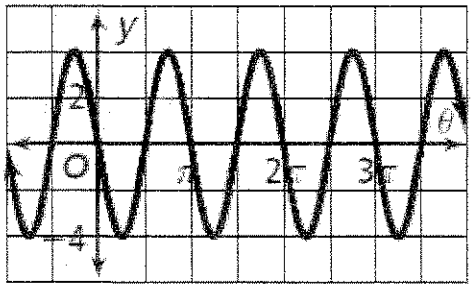
$\frac{2\pi}{b} = \pi$

Period: π Horizontal Shift: NA

Amplitude: 2.5 Vertical Shift: NA

Equation: $-2.5\sin 2\theta$

8)



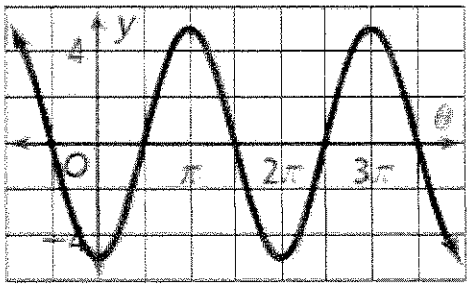
$\frac{2\pi}{b} = \pi$

Period: π Horizontal Shift: NA

Amplitude: 4 Vertical Shift: NA

Equation: $-4\sin 2\theta$

9)



Period: 2π Horizontal Shift: NA

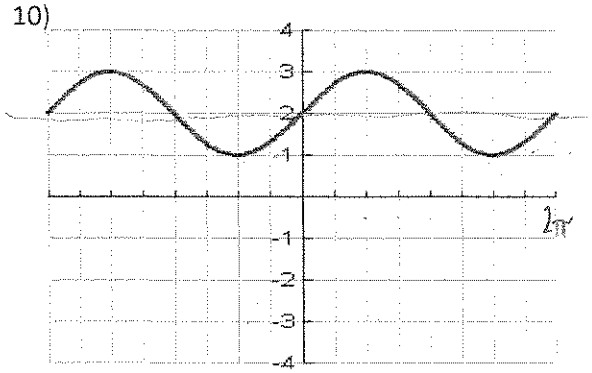
Amplitude: 3 Vertical Shift: NA

Equation: $-3\cos\theta$

or

$3\sin(\theta - \frac{\pi}{2})$

10)



Period: 2π Horizontal Shift: NA

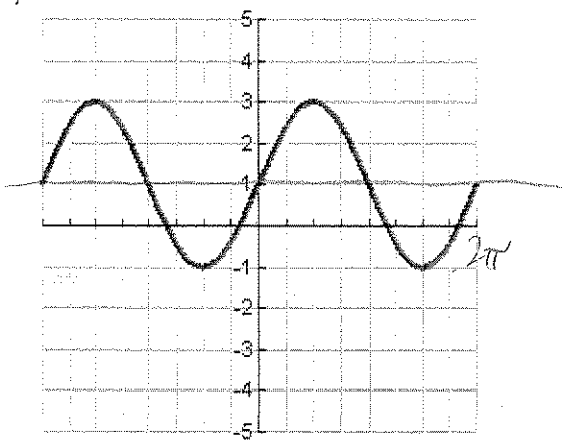
Amplitude: 1 Vertical Shift: 2

Equation: $2+\sin\theta$

or

$2-\cos(\theta+\frac{\pi}{2})$

11)



Period: 2π Horizontal Shift: NA

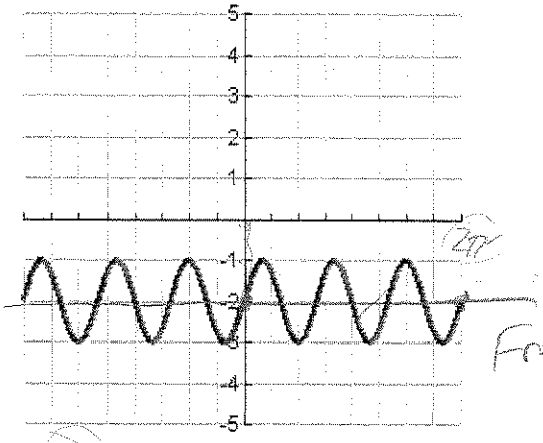
Amplitude: 2 Vertical Shift: 1

Equation: $1+2\sin\theta$

or

$1-2\cos\left(\theta+\frac{\pi}{2}\right)$

12)



Freq = 3

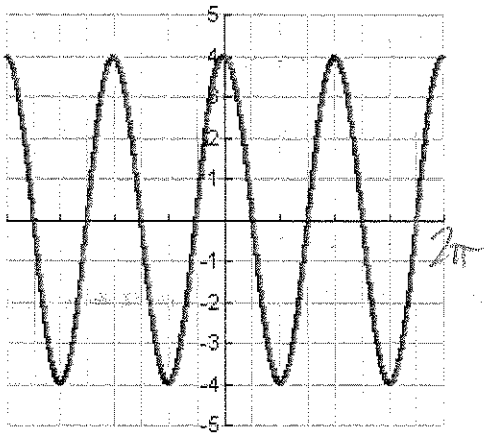
$\frac{2\pi}{3}$

Period: $\frac{2\pi}{3}$ Horizontal Shift: NA

Amplitude: 1 Vertical Shift: -2

Equation: $-2+\sin 3\theta$

13)



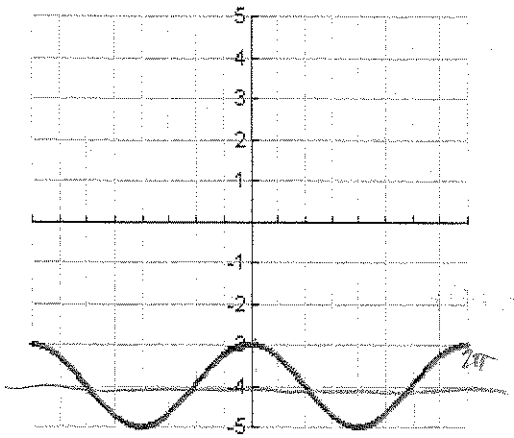
$\frac{2\pi}{b}=\pi$

Period: π Horizontal Shift: NA

Amplitude: 4 Vertical Shift: NA

Equation: $4\cos 2\theta$

14)

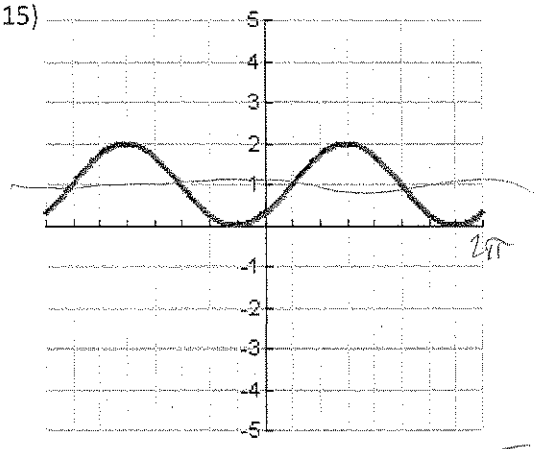


Period: 2π Horizontal Shift: NA

Amplitude: 1 Vertical Shift: -4

Equation: $-4+\cos\theta$

15)

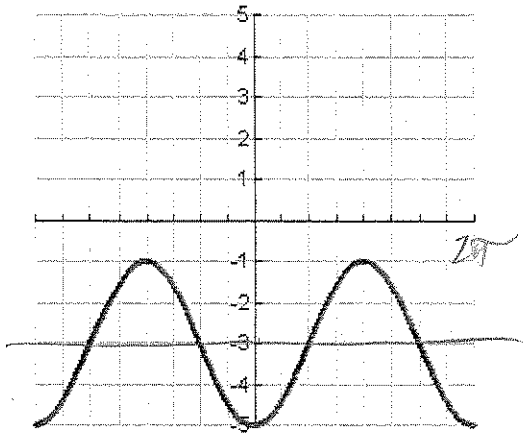


Period: 2π Horizontal Shift: $\frac{\pi}{4}$

Amplitude: 1 Vertical Shift: 1

Equation: $1+\sin(\theta-\frac{\pi}{4})$

16)

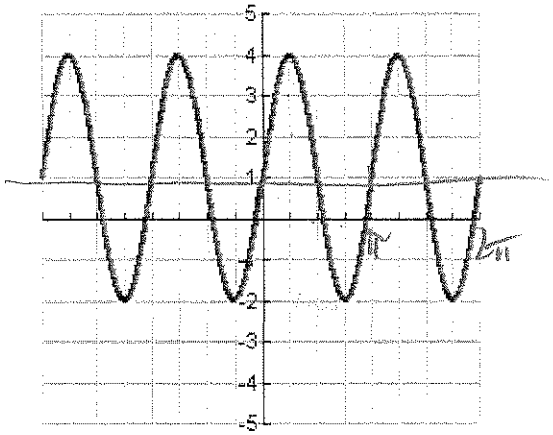


Period: 2π Horizontal Shift: NA

Amplitude: 2 Vertical Shift: -3

Equation: $-3-2\cos\theta$

17)

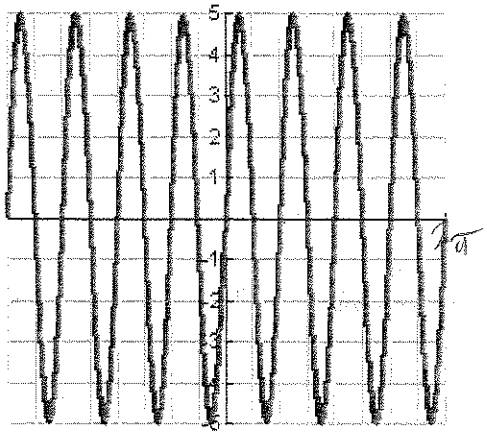


$\frac{2\pi}{b}=\pi$ Period: π Horizontal Shift: NA

Amplitude: 3 Vertical Shift: 1

Equation: $1+3\sin 2\theta$

18)



Period: $\frac{\pi}{2}$ Horizontal Shift: NA $\frac{2\pi}{b}=\frac{\pi}{2}$

Amplitude: 5 Vertical Shift: NA

Equation: $5\sin 4\theta$