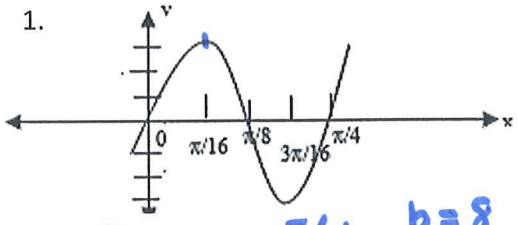
Key

Writing Equations of Trig Functions In-Class Practice

Directions: Determine the amplitude, period, vertical and phase shifts, then write the equations of each graph.

1.



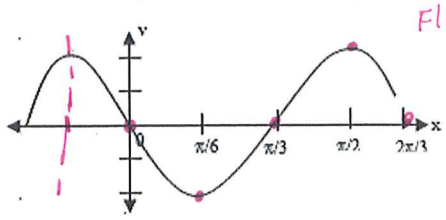
Amp: 3 Period: π/4 b=8

VS: none Sine PS: none Cos PS: Right π/16

Sine EQ: $y = 3\sin 8\theta$

Cosine EQ: $y = 3\cos 8(\theta - \pi/16)$

2.



Flip! or no? Both!

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

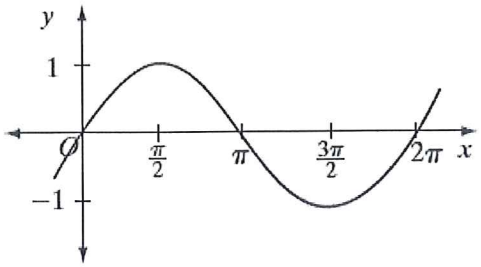
Amp: 2 Period: 2π/3 b=3

VS: none Sine PS: none Cos PS: left π/6

Cosine EQ: $y = 2\cos 3(\theta + \pi/6)$

Sine EQ: $y = -2\sin 3(\theta)$ OR $y = 2\sin 3(\theta - \pi/3)$

3.

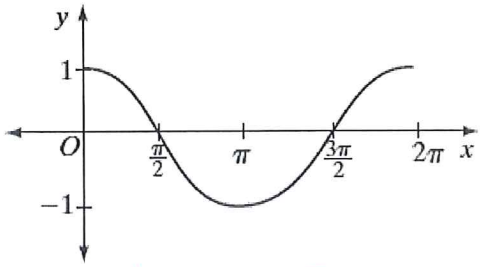


Amp: 1 Period: 2π b=1

VS: none PS: none

Sine EQ: $y = \sin\theta$

4.

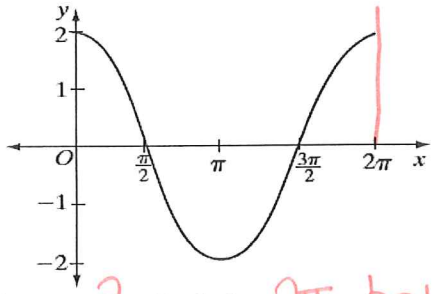


Amp: 1 Period: 2π b=1

VS: none PS: none

Cosine EQ: $y = \cos\theta$

5.

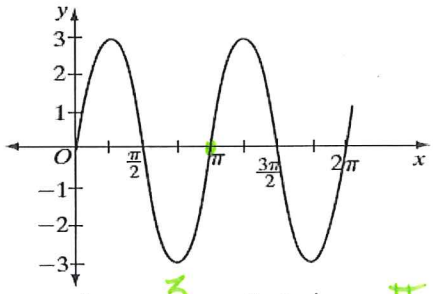


Amp: 2 Period: 2π b=1

VS: none PS: none

Cosine EQ: $y = 2\sin\theta$

6.

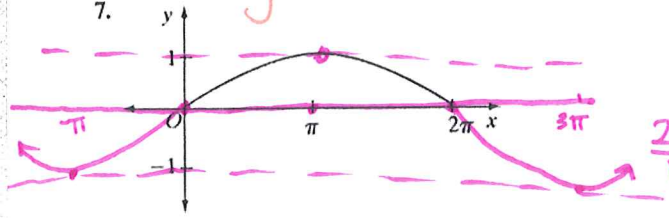


Amp: 3 Period: π b=2

VS: none PS: none

Sine EQ: $y = 3\sin 2\theta$

7.

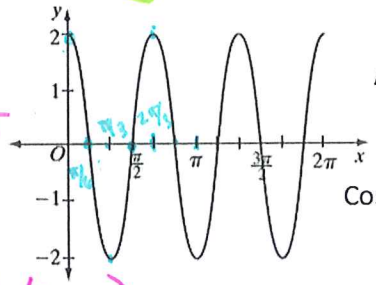


$\frac{2\pi}{b} = 4\pi$

Amp: 1 Period: 4π b=1/2

VS: none PS: left π Cos EQ: $y = -\cos\frac{1}{2}(\theta + \pi)$

8.

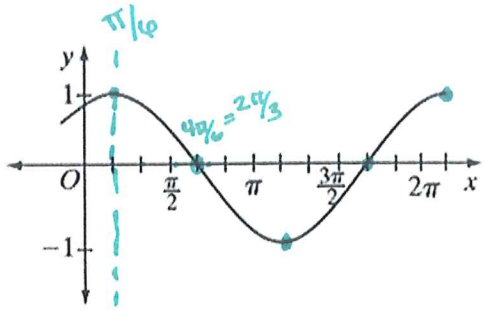


Amp: 2 Period: 2π/3 b=3

VS: none PS: none

Cos EQ: $y = 2\cos 2\theta$

9.



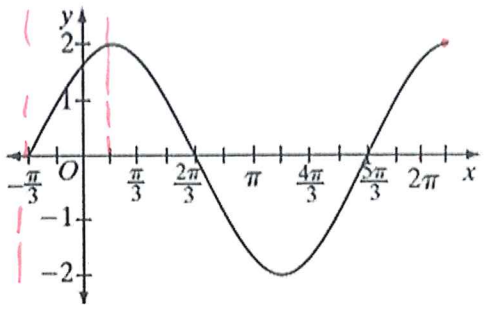
Amp: 1 Period: 2π b=1

VS: none Sine PS: Right 2π/3 Cos PS: Right π/6

Sin EQ: $y = -\sin(\theta - 2\pi/3)$

Cosine EQ: $y = \cos(\theta - \pi/3)$

10.



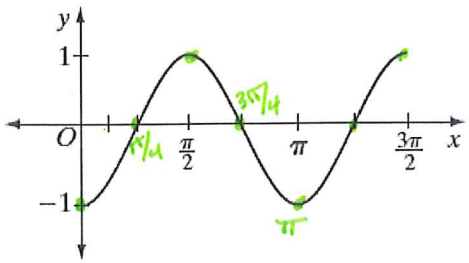
Amp: 2 Period: 2π b=1

VS: none Sine PS: left π/3 Cos PS: Right π/6

Sin EQ: $y = 2\sin(\theta + \pi/3)$

Cosine EQ: $y = 2\cos(\theta - \pi/6)$

11.



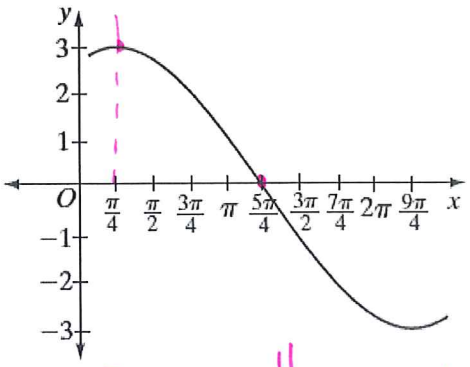
Amp: 1 Period: π b=2

VS: none Sine PS: Right π/4 Cos PS: none

Sin EQ: $y = \sin 2(\theta - \pi/4)$

Cosine EQ: $y = -\cos 2\theta$

12.



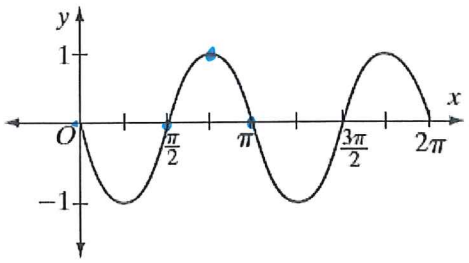
Amp: 3 Period: 4π b=1/2

VS: none Sine PS: Right 5π/4 Cos PS: Right π/4

Sin EQ: $y = -3\sin\frac{1}{2}(\theta - \frac{5\pi}{4})$

Cosine EQ: $y = 3\cos\frac{1}{2}(\theta - \pi/4)$

13.



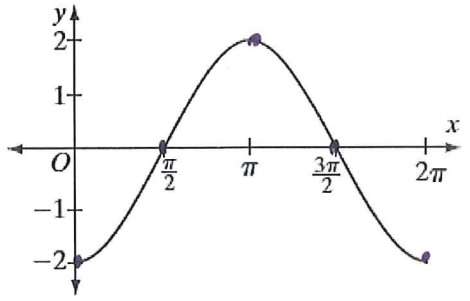
Amp: 1 Period: π b=2

VS: none Sine PS: Right π/2 Cos PS: ~~DNE~~ Right 3π/4

Sin EQ: $y = \sin 2(\theta - \pi/2)$

Cosine EQ: $y = \cos 2(\theta - 3\pi/4)$

14.



Amp: 2 Period: 2π b=1

VS: none Sine PS: Right π/2 Cos PS: none

Sin EQ: $y = \sin(\theta - \pi/2)$

Cosine EQ: $y = -\cos(\theta)$