Name: _____ Hour: _____ Date: _____

Writing Equations of Sine/Cosine Graphs Notes

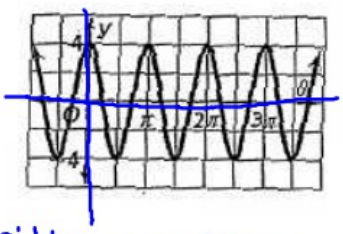
Part 1 – From a Given Graph

- The main difference between the sine and cosine function (that we'll be seeing in Algebra 2):

cosine does not cross through the origin.

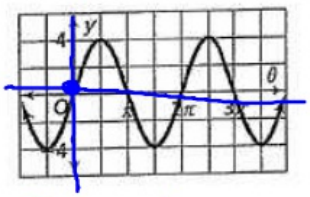
Determine if the given graph is a sine or cosine graph, and whether it is positive or negative.

a)



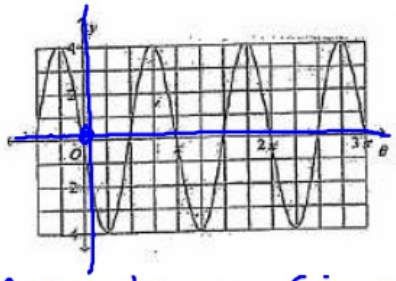
positive cosine

b)



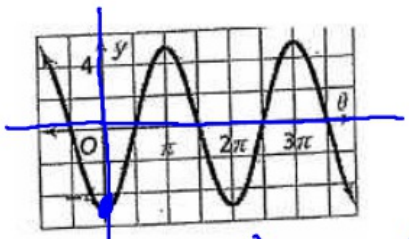
positive Sine

c)



Negative Sine

d)



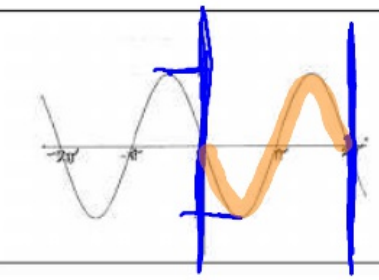
Negative cosine

Steps to determine the equation of the function from the given graph:

1. Determine if it's positive or negative, Sine or Cosine.
2. Find "a" → look at max/min
3. Find "b" → count the number of cycles between 0 and 2π

Write an equation to match the following graph

1)

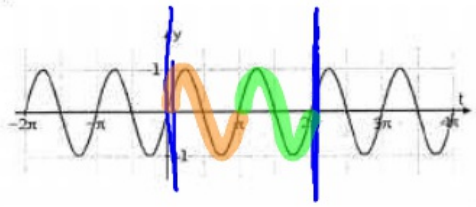


Function Family: Sine positive/negative

a = −1 b = 1

Equation: $y = -1\sin 1\theta$

2)

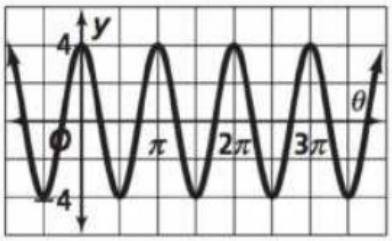


Function Family: Sine positive/negative

a = 1 b = 2

Equation: $y = \sin 2\theta$

3)

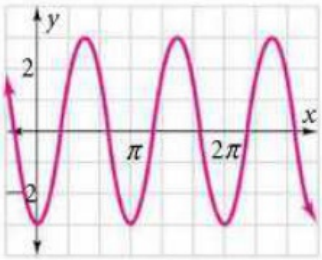


Function Family: cos positive/negative

a = 4 b = 2

Equation: $y = 4\cos 2\theta$

4)

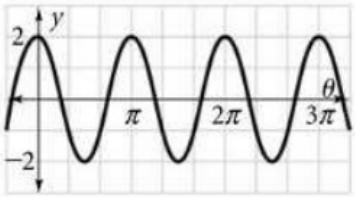


Function Family: Cos positive/negative

a = −3 b = 2

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

5)

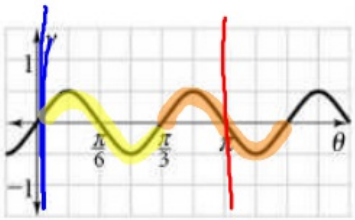


Function Family: COSINE positive/negative

a = 2 b = 2

Equation: $y = 2\cos 2\theta$

6)



Function Family: Sine positive/negative

a = 0.5 b = 3

Equation: $y = 0.5\sin 3\theta$