Warm Up

Put in standard form

3. $\frac{y+5}{3} = 3\cos(2\theta + 90°) + 6$ ·3

$y + 5 = 3\cos[2(\theta + 45°)] + 18$

$y = 3\cos[2(\theta + 45°)] + 13$

$a = 3$

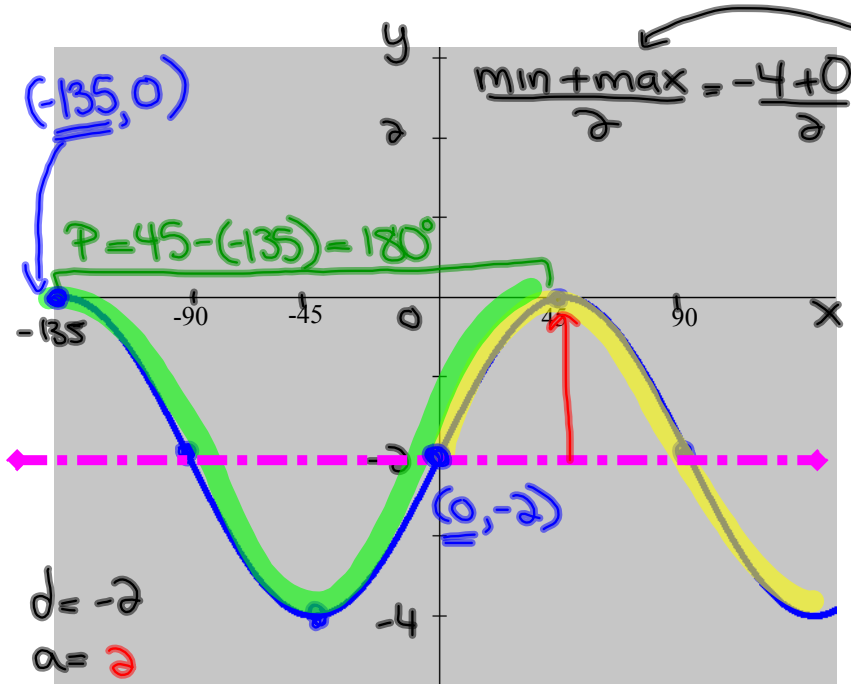
$b = 2$

$c = -45°$

$d = 13$

$P = \frac{360°}{2} = 180°$

Develop an equation that corresponds to the graph



d = -2

a = 2

P = 180°

$b = \frac{360°}{180°} = 2$

Hint: Draw sinusoidal axis first! $y = -2$

Look for a sine graph

$c = 0$

$y = 2\sin[2(\theta - 0°)] - 2$

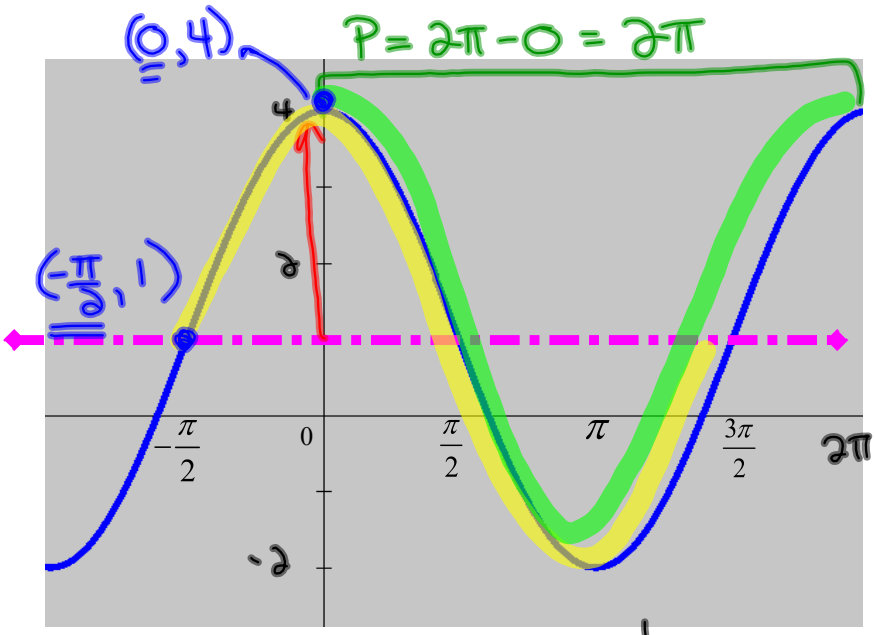
$y = 2\sin 2(\theta) - 2$

What about a cosine graph?

$c = -135°$

$y = 2\cos[2(\theta + 135°)] - 2$

Determine a sine and a cosine equation for this graph



$y = \sin\theta$

$c = -\frac{\pi}{2}$

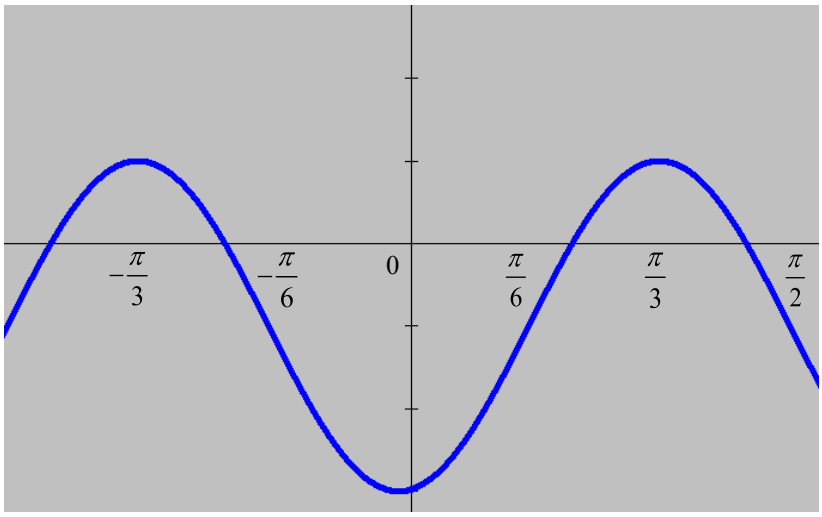
$y = 3\sin[1(\theta + \frac{\pi}{2})] + 1$

$y = \cos\theta$

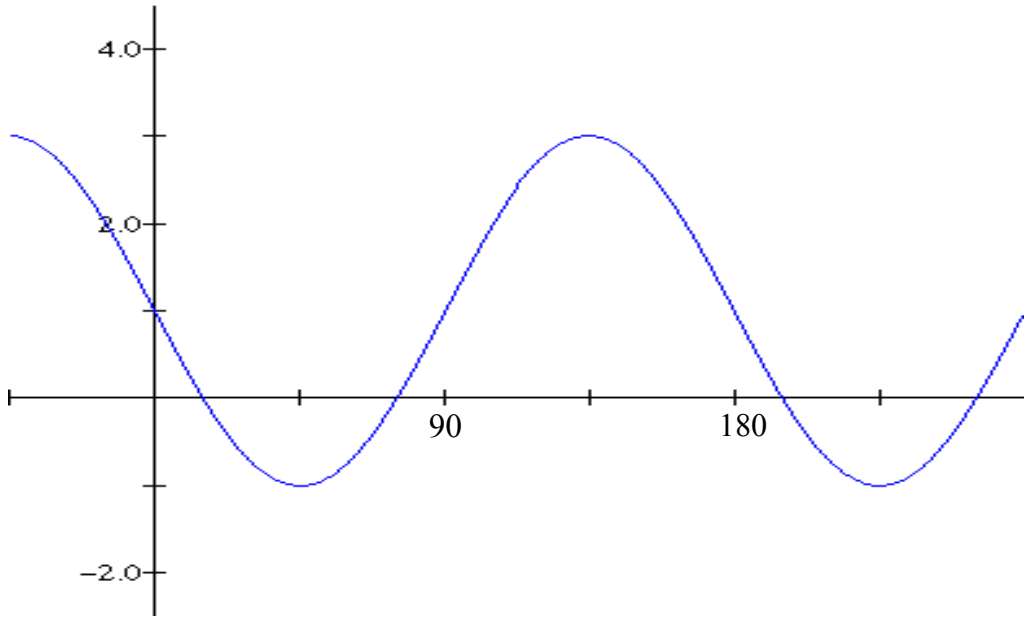
$c = 0$

$y = 3\cos[1(\theta - 0)] + 1$

Write both a sine and cosine equation to describe the following graph:



Find four equations that match the graph:



Check with a calculator...

Homework

Mathematical Modeling p. #28

Attachments

Worksheet - Sketching Sinusoidal relations (sept06).pdf