Warm Up

Put in standard form

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

$y \boxed{+5} = 3\cos(2\theta+90°)+18 \;\; -5$

$y = 3\cos(2\theta+90°)+13$

$y = 3\cos\left[2(\theta+45°)\right]+13$

"Left"   "Up"

$A=3 \qquad K=2 \qquad C=-45° \qquad D=13$

$P=\dfrac{360}{2}=180$

Graph the following:

$$y = -2\cos[2(x-90)]-3 \qquad (x, y) \rightarrow \left(\frac{x}{k}+C, Ay+D\right)$$

A = 2

k = 2

C = 90

D = -3

P = 180

$y = -\cos x$

X	y
0	-1
90	0
180	1
270	0
360	-1

New points after mapping →

X	y
90	-5
135	-3
180	-1
225	-3
270	-5

⑤ $2y + 3 = -4\sin(4x - 60°) - 3 \quad -3$

$$\frac{2y}{2} = \frac{-4}{2}\sin(4x - 60°) - \frac{6}{2}$$
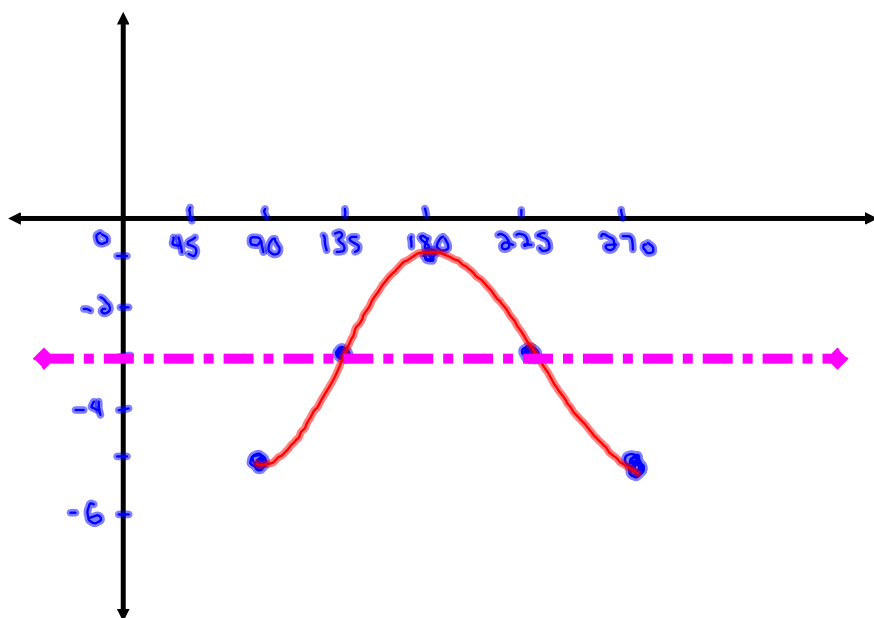
$$y = -2\sin(4x - 60°) - 3$$

$$y = -2\sin[4(x - 15°)] - 3$$

$A = 2 \qquad K = 4 \qquad C = 15 \qquad D = -3$

$P = 90°$

$y = -\sin x$

x	y
0	0
90	-1
180	0
270	1
360	0

→

x	y
15	-3
37.5	-5
60	-3
82.5	-1
105	-3
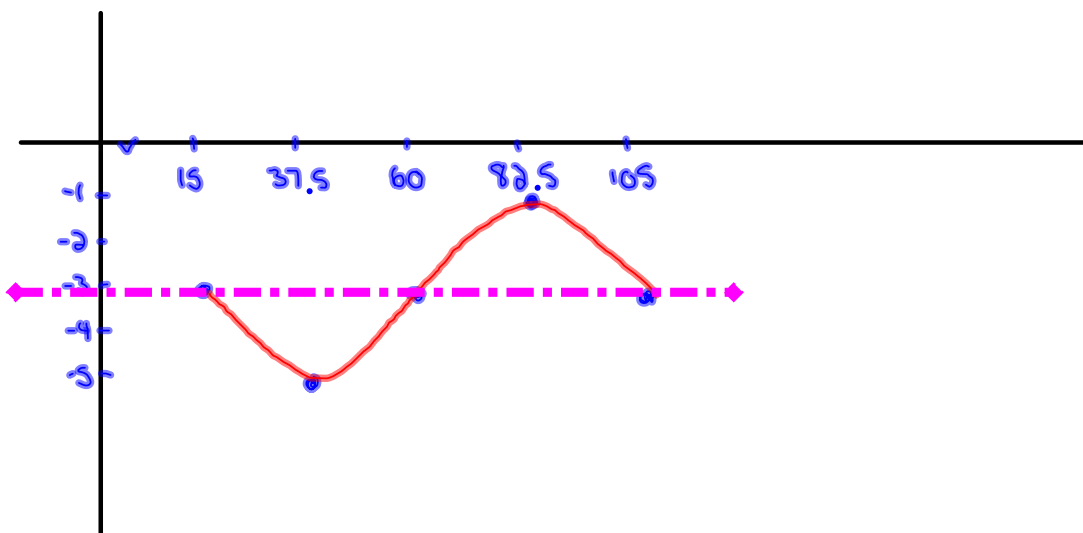
Finding an Equation from a Graph:

Can you find an equation that describes this graph?

Hint: Draw sinusoidal axis first!

$A = 2$

$y = -\cos\theta$

$P = 150 - 30 = 120$
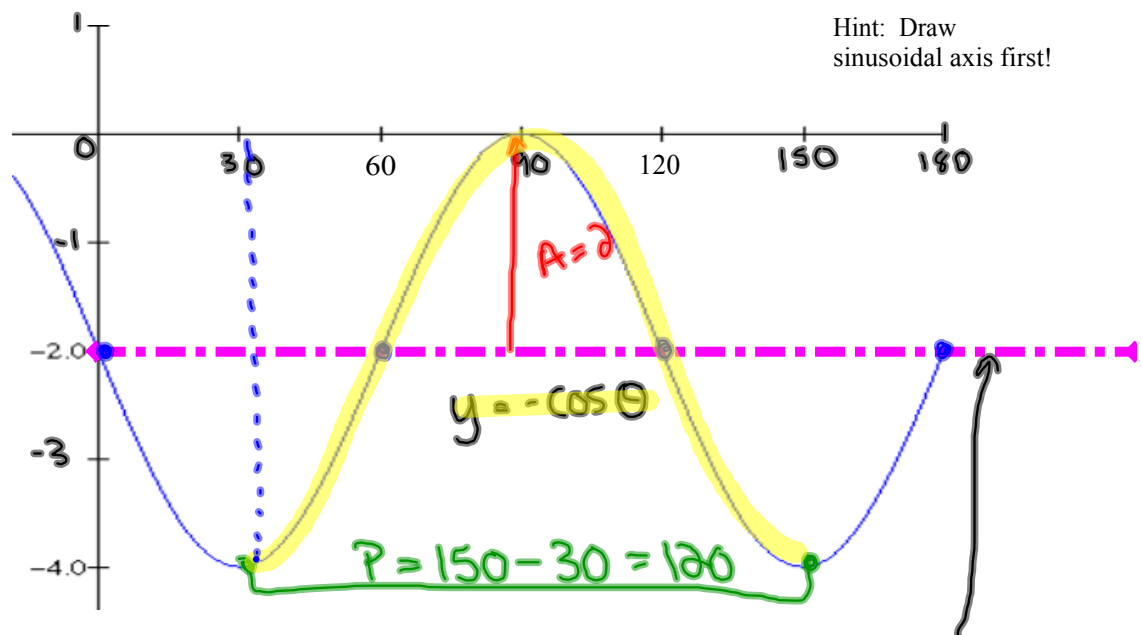
$A = 2 \qquad K = 3 \qquad C = 30° \qquad D = -2$

$P = 120$

Check the equation using **<u>any</u>** point from the graph

$$y = -2\cos\left[3(\theta - 30°)\right] - 2$$

Attachments

Worksheet - Sketching Sinusoidal relations (sept06).pdf