Homework

$y = 3\sin(x - 60) + 0$

$(x, y) \rightarrow \left(\frac{x}{k} + C, Ay + D\right)$

A = 3

k = 1

C = 60

D = 0

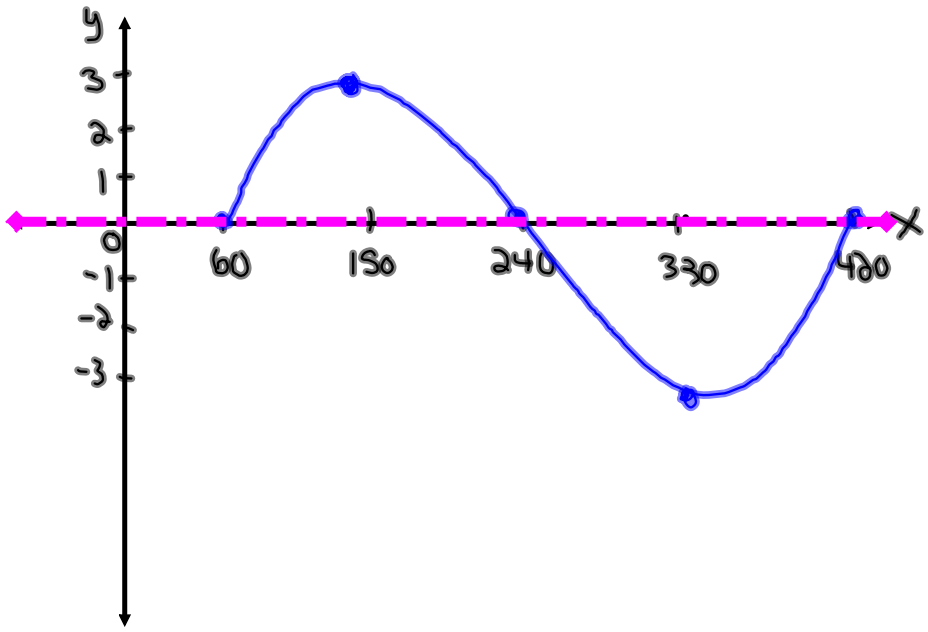
P = $\frac{360}{1} = 360$

$y = \sin x$

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

New points after mapping

x	y
60	0
150	3
240	0
330	-3
420	0



$$y = -3\cos[2(x+30)]+1$$

$$(x, y) \rightarrow \left(\frac{x}{k}+C, Ay+D\right)$$

A = 3

k = 2

C = -30

D = 1

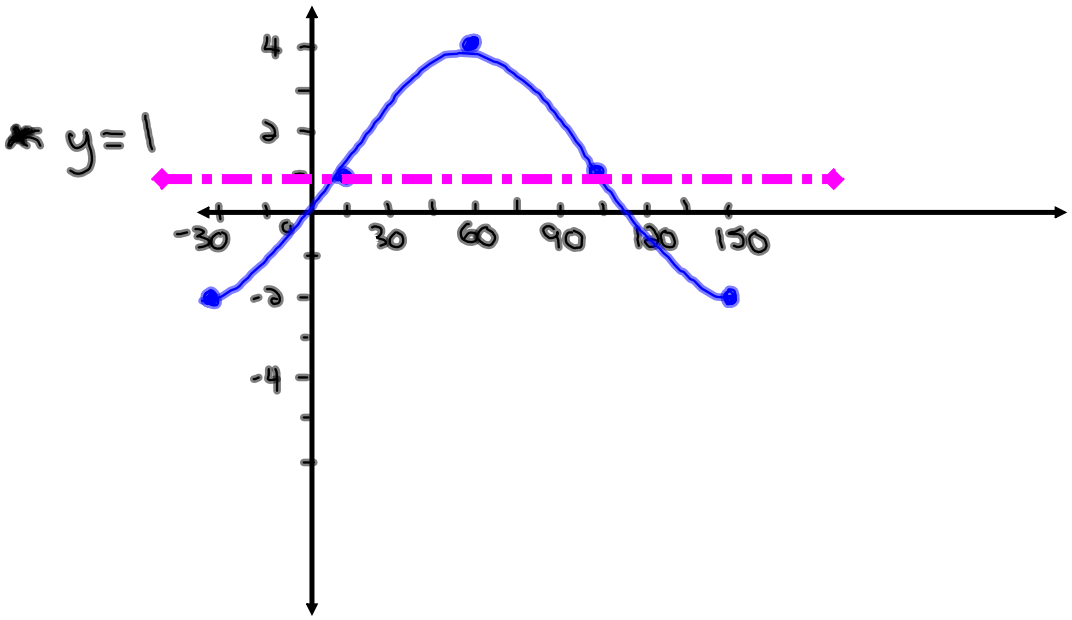
P = 180

$y = -\cos x$

x	y
0	
90	
180	
270	
360	

New points after mapping

x	y
-30	-2
15	1
60	4
105	1
150	-2



State **A, k, C, D, and P** from the following sinusoidal equations:

$$y = -4\sin[3(\theta + 90)] - 1$$

A = 4

k = 3

C = -90

D = -1

P = $\frac{360}{3} = 120$

$$y = 2\cos(\theta - 30) + 3$$

A = 2

k = 1

C = 30

D = 3

P = $\frac{360}{1} = 360$

State **A, k, C, D, and P** from the following sinusoidal equations:

$$y = \frac{1}{2}\sin\left[\frac{1}{2}(\theta - 60)\right] - 2$$

A = $\frac{1}{2}$

k = $\frac{1}{2}$

C = 60

D = -2

P = $\frac{360}{\frac{1}{2}} = 720$

$$y + 2 = \sin(3\theta - 90)$$

(Put in standard form!)

$$y = \sin[3(\theta - 30)] - 2$$

A = 1

k = 3

C = 30

D = -2

P = $\frac{360}{3} = 120$

Graph the following:

$$y = -2\cos[2(x-90)]-3$$

$$(x, y) \rightarrow \left(\frac{x}{k} + C, Ay + D\right)$$

A = 2

k = 2

C = 90

D = -3

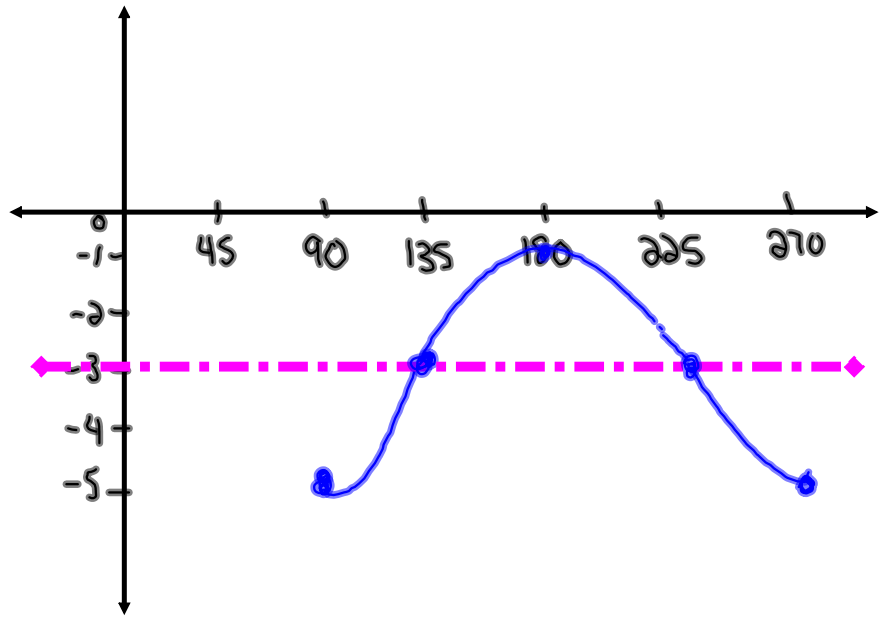
P = $\frac{360}{2} = 180$

$y = -\cos x$

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



Solutions to Homework

① $y = 3\cos(x) - 2$

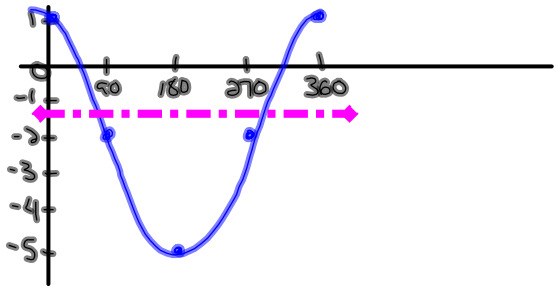
$A = 3 \quad K = 1 \quad C = 0 \quad D = -2 \quad P = 360$

$y = \cos x$

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

→

x	y
0	1
90	-2
180	-5
270	-2
360	1



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② $y = -\sin(2x - 30°)$

$y = -\sin[2(x - 15°)]$

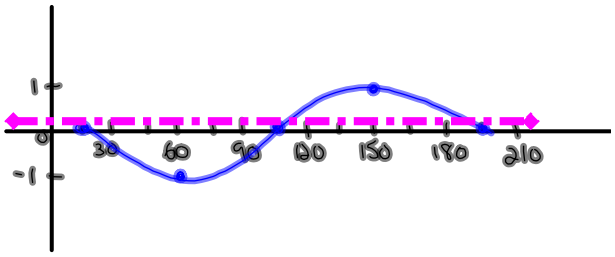
$A = 1 \quad K = 2 \quad C = 15 \quad D = 0 \quad P = 180$

$y = -\sin x$

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

→

x	y
15	0
60	-1
105	0
150	1
195	0



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③ $y = 4\sin(3x - 180°) + 2$

$y = 4\sin[3(x - 60°)] + 2$

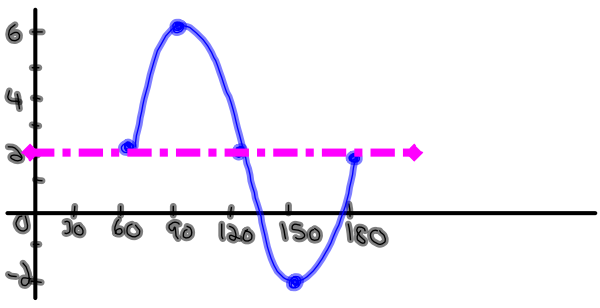
$A = 4 \quad K = 3 \quad C = 60 \quad D = 2 \quad P = 120$

$y = \sin x$

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

→

x	y
60	2
90	6
120	2
150	-2
180	2



⑤ $2y+3 = -4\sin(4x-60)-3$

$2y = -4\sin[4(x-15)]-6$

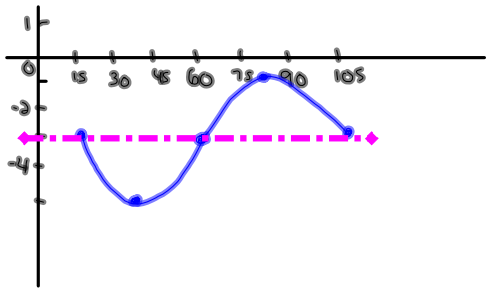
$y = -2\sin[4(x-15)]-3$

$A=2 \quad K=4 \quad C=15 \quad D=-3 \quad P=90$

$y=-\sin x$

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



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⑥ ~~$\frac{y-1}{2} = 2\cos(\theta+45^\circ)+0$~~ ·2

$y-1 = 4\cos(\theta+45^\circ)+0$ +1

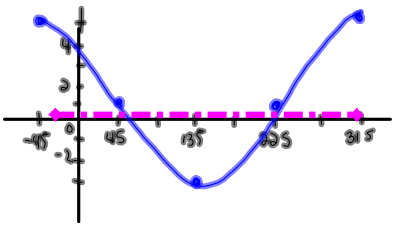
$y = 4\cos(\theta+45^\circ)+1$

$A=4 \quad K=1 \quad C=-45 \quad D=1 \quad P=360$

$y=\cos x$

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

x	y
-45	5
45	1
135	-3
225	1
315	5



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① $\frac{1}{2}y - 1 = \sin(2x+90^\circ)$

·2 $\frac{1}{2}y = 2\sin[2(x+45^\circ)]+1$ ·2

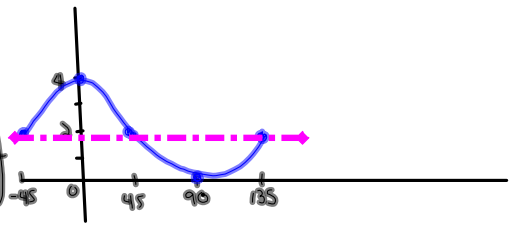
$y = 2\sin[2(x+45)]+2$

$A=2 \quad K=2 \quad C=-45^\circ \quad D=2 \quad P=180$

$y=\sin x$

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

x	y
-45	2
0	4
45	2
90	0
135	2



⑧ $y = -4\cos(3x+90^\circ)-2$

$y = -4\cos[3(x+30)]-2$

$A=4 \quad k=3 \quad c=-30 \quad D=-2 \quad P=120$

$y=-\cos x$

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

→

x	y
-30	-6
0	-2
30	2
60	-2
90	-6