QUEST – FRIDAY, JUNE 7TH

NAME: KEY HOUR: ____

GRAPHING SINE AND COSINE STUDY GUIDE

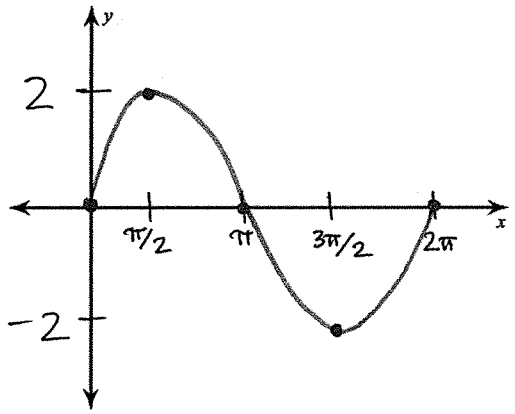
DIRECTIONS: FIND THE PERIOD AND AMPLITUDE OF EACH FUNCTION, THEN GRAPH.

1. $y = 2 \sin\theta$

AMPLITUDE: 2

PERIOD: $\frac{2\pi}{1}$

x	0	$\pi/2$	π	$3\pi/2$	2π
y	0	2	0	-2	0

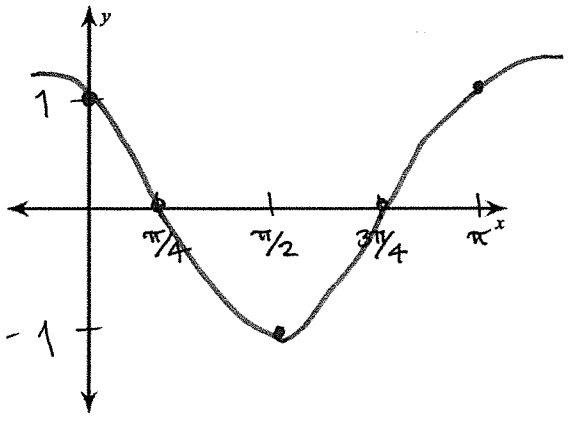


2. $y = \cos 2\theta$

AMPLITUDE: 1

PERIOD: $\frac{2\pi}{2} = \pi$

x	0	$\pi/4$	$\pi/2$	$3\pi/4$	π
y	1	0	-1	0	1

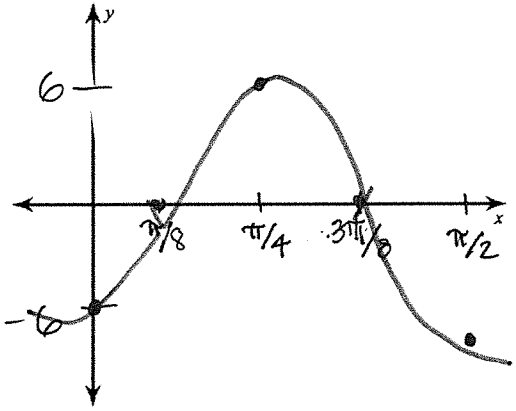


3. $y = -6 \cos 4\theta$

AMPLITUDE: 6

PERIOD: $\frac{2\pi}{4} = \frac{\pi}{2}$

x	0	$\pi/8$	$\pi/4$	$3\pi/8$	$\pi/2$
y	-6	0	+6	0	-6

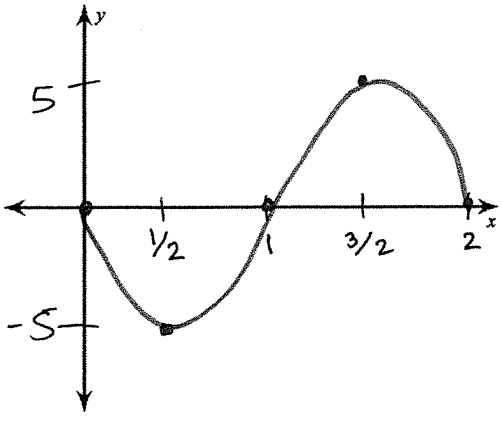


4. $y = -5 \sin \pi\theta$

AMPLITUDE: 5

PERIOD: $\frac{2\pi}{\pi} = 2$

x	0	1/2	1	3/2	2
y	0	-5	0	5	0

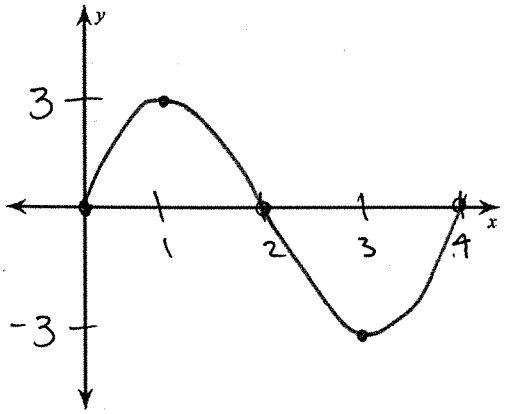


5. $y = 3 \sin \frac{\pi}{2}\theta$

AMPLITUDE: 3

PERIOD: $\frac{2\pi}{\pi/2} \Rightarrow 2\pi \cdot \frac{2}{\pi} = 4$

x	0	1	2	3	4
y	0	3	0	-3	0

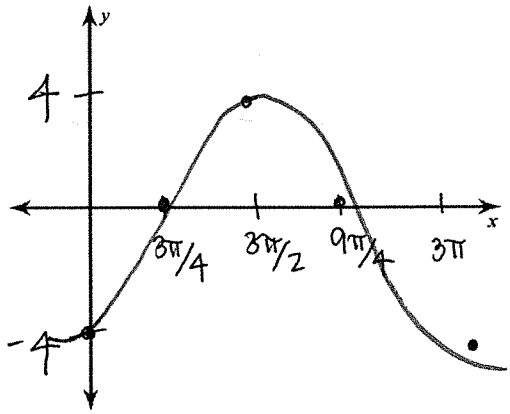


6. $y = -4 \cos \frac{2}{3}\theta$

AMPLITUDE: 4

PERIOD: $\frac{2\pi}{2/3} \Rightarrow 2\pi \cdot \frac{3}{2} = \frac{6\pi}{2} = 3\pi$

x	0	$3\pi/4$	$3\pi/2$	$9\pi/4$	3π
y	-4	0	4	0	4



DIRECTIONS: WRITE AN EQUATION THAT MATCHES THE GIVEN DESCRIPTION.

7. A positive cosine function with an amplitude of 3 and period of 4π.

$y = 3 \cos \frac{1}{2}\theta$ $\qquad b = \frac{2\pi}{4\pi} = \frac{1}{2}$

8. A negative sine function with an amplitude of 4 and period of 4.

$y = -4 \sin \frac{\pi}{2}\theta$ $\qquad b = \frac{2\pi}{4} = \frac{\pi}{2}$

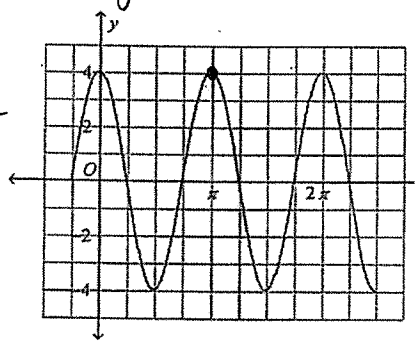
9. A positive sine function with amplitude of 10 and period of π.

$y = 10 \sin 2\theta$ $\qquad b = \frac{2\pi}{\pi} = 2$

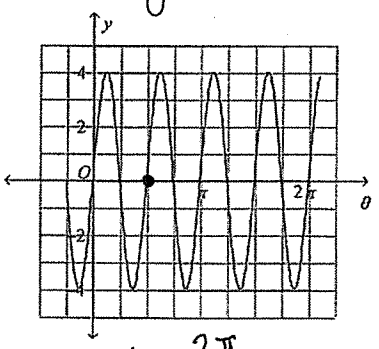
DIRECTIONS: WRITE AN EQUATION THAT SATISFIES THE GIVEN GRAPH.

10. Equ.: $y = -4 \cos 2\theta$

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

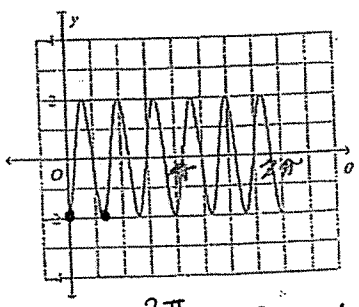


11. Equ.: $y = 4 \sin 4\theta$



$b = \frac{2\pi}{\pi/2} \Rightarrow 2\pi \cdot \frac{2}{\pi} = 4$

12. Equ.: $y = -2 \cos 8\theta$



$b = \frac{2\pi}{\pi/4} = 2\pi \cdot \frac{4}{\pi} = 8$