PreCalculus – Scientific Calculator Only! **Name** Key
Practice Quiz A – Graphing Sine and Cosine

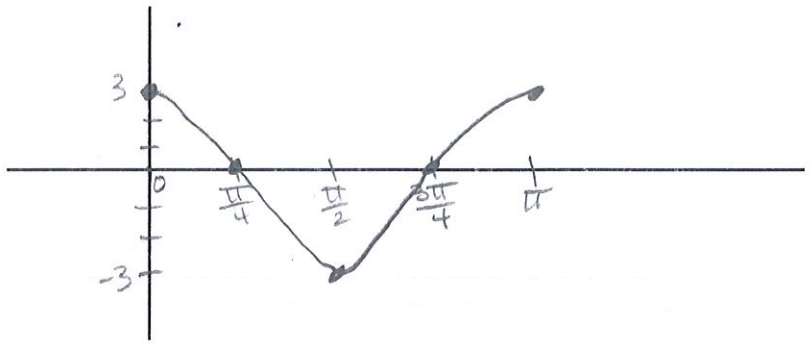
_____ **/ 51 Points (Not for a Grade)**

Graph each function, labeling all critical points on the x-axis and y-axis. Identify the characteristics. (2 points each blank. 5 points each graph.)

Degrees?

1. Graph $y = 3\cos(2x)$

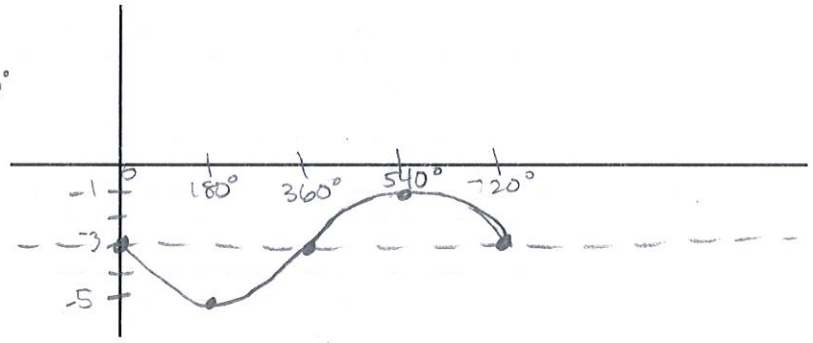
amplitude = 3
period = $\frac{2\pi}{2} = \pi$
phase shift = none
vertical shift = none
domain: $[0, \pi]$
range: $[-3, 3]$



2. $y = -2\sin\left(\frac{1}{2}\theta\right) - 3$

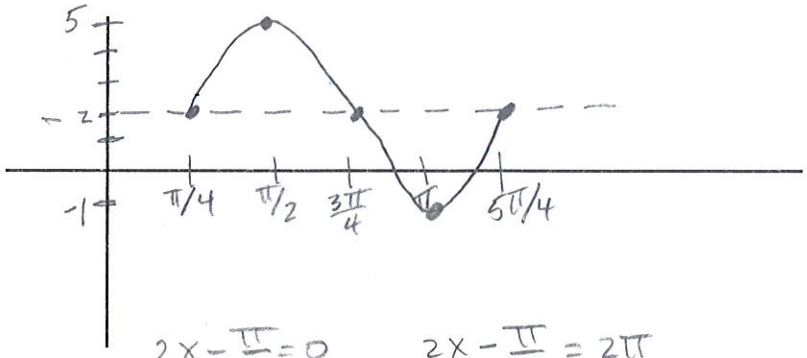
Reflect

amplitude = 2
period = $\frac{360°}{1/2} = 360° \cdot 2 = 720°$
phase shift = none
vertical shift = −3
domain: $[0, 720°]$
range: $[-5, -1]$



3. $y = 3\sin\left(2x - \frac{\pi}{2}\right) + 2$

amplitude = 3
period = $\frac{2\pi}{2} = \pi$
phase shift = $\frac{\pi}{4}$
vertical shift = 2
domain: $[\frac{\pi}{4}, \frac{5\pi}{4}]$
range: $[-1, 5]$



$2x - \frac{\pi}{2} = 0$
$2x = \frac{\pi}{2}$
$x = \frac{\pi}{2} \cdot \frac{1}{2}$
$x = \frac{\pi}{4}$

$2x - \frac{\pi}{2} = 2\pi$
$2x = \frac{4\pi}{2} + \frac{\pi}{2}$
$2x = \frac{5\pi}{2}$
$x = \frac{5\pi}{2} \cdot \frac{1}{2}$
$x = \frac{5\pi}{4}$

PreCalculus - Scientific Calculator Only! Name Key
Practice Quiz B – Graphing Sine and Cosine

_____ **/ 51 Points (Not for a Grade)**

Graph each function, labeling all critical points on the x-axis and y-axis. Identify the characteristics. (2 points each blank. 5 points each graph.)

Degrees?

1. Graph $y = 3\sin\left(\frac{1}{2}x\right)$

amplitude = 3

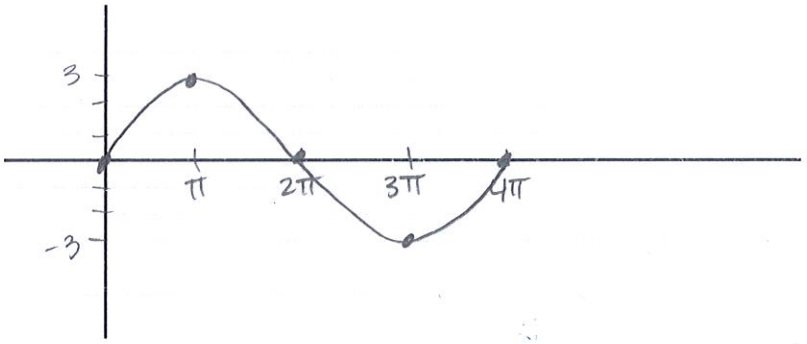
period = $\frac{2\pi}{\frac{1}{2}} = 2\pi \cdot 2 = 4\pi$

phase shift = none

vertical shift = None

domain: $[0, 4\pi]$

range: $[-3, 3]$



2. $y = -2\cos(3\theta) + 3$
↳ Reflection!

amplitude = 2

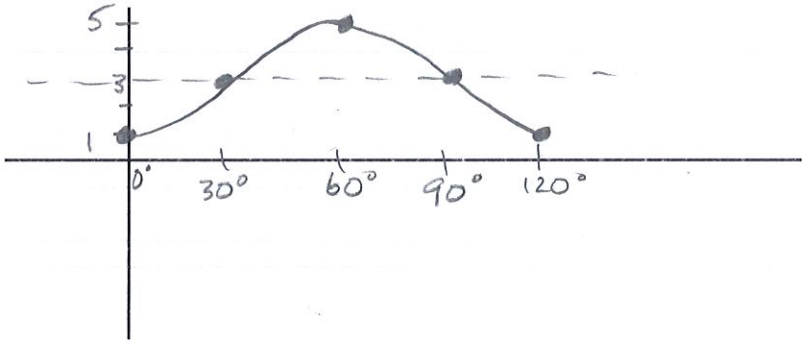
period = $\frac{360}{3} = 120°$

phase shift = none

vertical shift = 3

domain: $[0°, 120°]$

range: $[1, 5]$



3. $y = 3\sin\left(2x - \frac{\pi}{2}\right) - 1$

Phase Shift $2x - \frac{\pi}{2} = 0$ $2x - \frac{\pi}{2} = 2\pi$

$\left(\frac{1}{2}\right) 2x = \frac{\pi}{2}\left(\frac{1}{2}\right)$ $2x = \frac{4\pi}{2} + \frac{\pi}{2}$

$x = \pi/4$ $\left(\frac{1}{2}\right) 2x = \frac{5\pi}{2}\left(\frac{1}{2}\right)$

$x = 5\pi/4$

amplitude = 3

period = $\frac{2\pi}{2} = 2\pi \cdot \frac{1}{2} = \pi$

phase shift = $\pi/4$

vertical shift = -1

domain: $[\pi/4, 5\pi/4]$

range: $[-4, 2]$