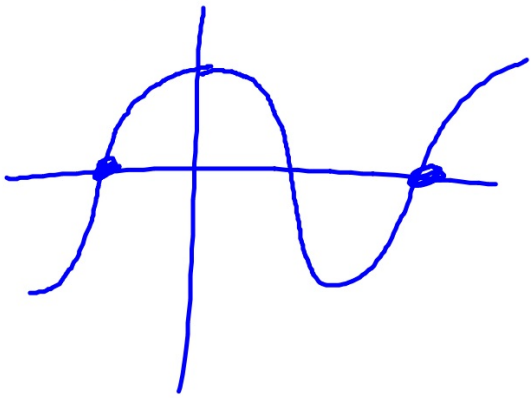
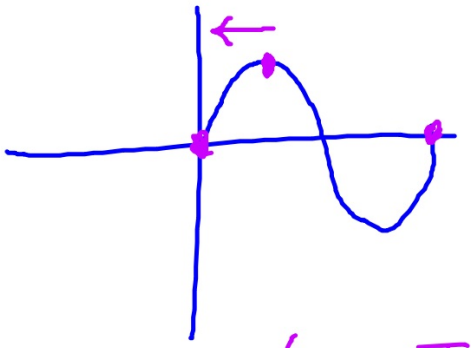
$y = \cos x$

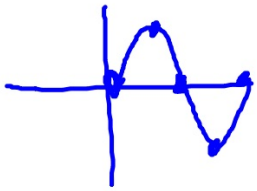


$y = \sin x$



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

1. $y = \sin(3x + \pi) - 4$



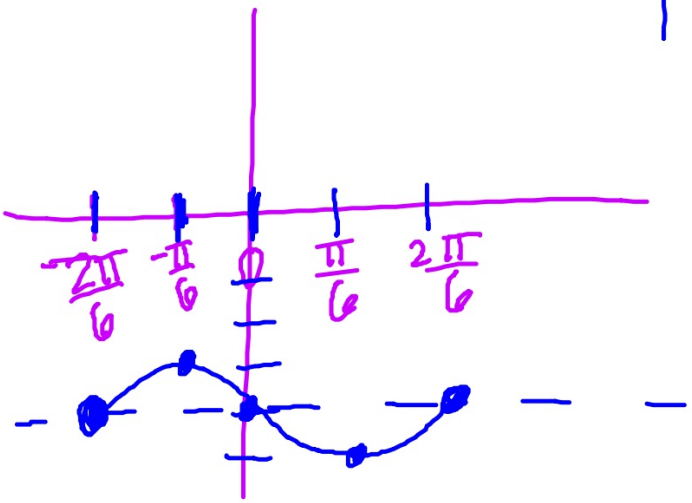
Amp: 1

period: $\frac{2\pi}{3}$

incr: $\frac{\pi}{6}$

Vert. $\downarrow 4$

PS: $\leftarrow \frac{\pi}{3}$



6.) $y = \cos(2\pi x \quad) - 4$

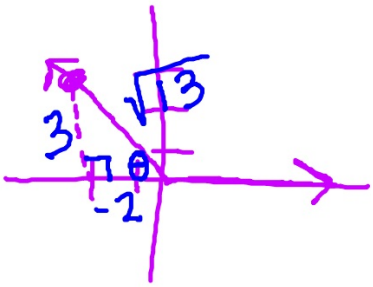
$y = \cos 2\pi(x + 3) - 4$

$y = \cos(2\pi x + 6\pi) - 4$

A little more trig...

Use the given point on the terminal side of angle θ to evaluate the six trigonometric functions of θ.

(-2, 3)



$\sin\theta = \frac{3}{\sqrt{13}} = \frac{3\sqrt{13}}{13}$

$\csc\theta = \frac{\sqrt{13}}{3}$

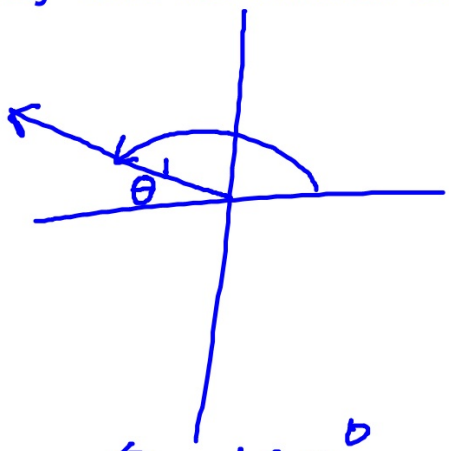
$\cos\theta = \frac{-2}{\sqrt{13}} = \frac{-2\sqrt{13}}{13}$

$\sec\theta = -\frac{\sqrt{13}}{2}$

$\tan\theta = -\frac{3}{2}$

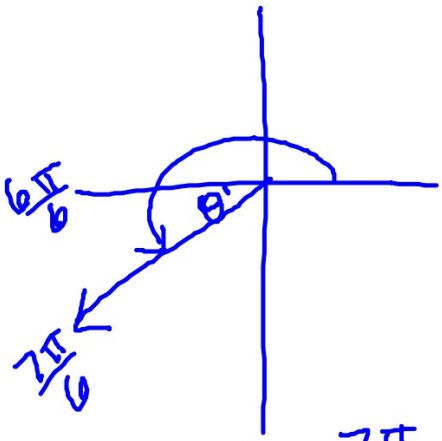
$\cot\theta = -\frac{2}{3}$

Reference angle: is the acute angle theta formed by the terminal side of theta and the x-axis.



$\theta = 160^\circ$

$\theta' = 20^\circ$



$\theta = \frac{7\pi}{6}$

$\theta' = \frac{\pi}{6}$

$$\tan\frac{7\pi}{6} = \frac{-\frac{1}{2}}{-\frac{\sqrt{3}}{2}} = \frac{\sqrt{3}}{3}$$

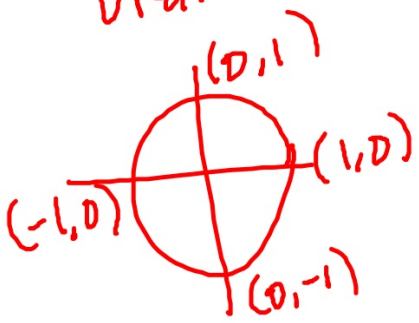
$\theta = \frac{7\pi}{4}$ $\theta' = \frac{\pi}{4}$

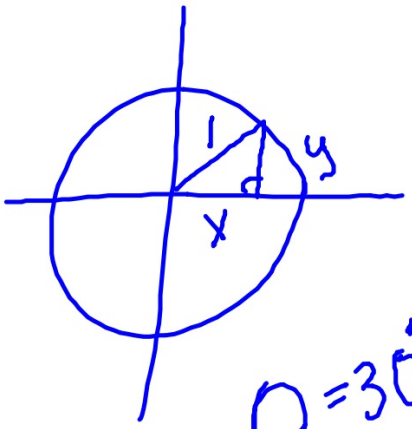
$\theta = \frac{2\pi}{3}$ $\theta' = \frac{\pi}{3}$

$\theta = \frac{5\pi}{7}$ $\theta' = \frac{2\pi}{7}$

	0°	30°	45°	60°	90°
$\sin\theta$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\cos\theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\tan\theta$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	und.

S	A
T	C





$\theta = 30°$

$$x^2 + y^2 = 1$$

$$(\cos\theta)^2 + (\sin\theta)^2 = 1$$

$$\boxed{\cos^2\theta + \sin^2\theta = 1}$$

$$\left(\frac{\sqrt{3}}{2}\right)^2 + \left(\frac{1}{2}\right)^2 = 1$$

$$\frac{3}{4} + \frac{1}{4} = 1 \checkmark$$