

Find the exact value of each expression.

1) $\sec \sin^{-1} \frac{2\sqrt{5}}{5}$

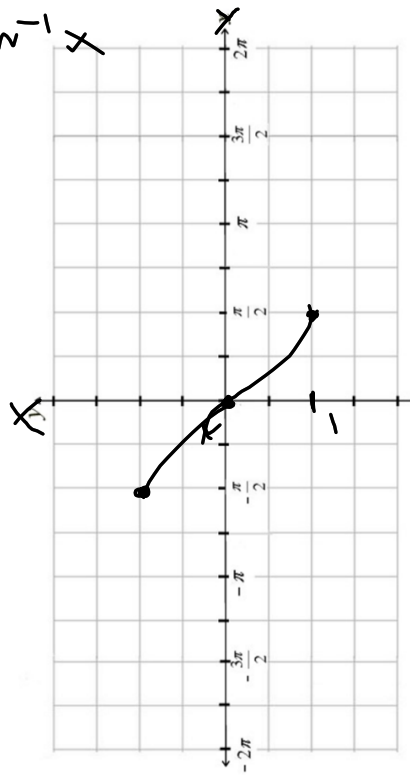
2) $\sin^{-1} \left(\tan \frac{\pi}{4} \right)$

Write each trigonometric expression as an algebraic expression.

3) $\csc \cos^{-1} x$

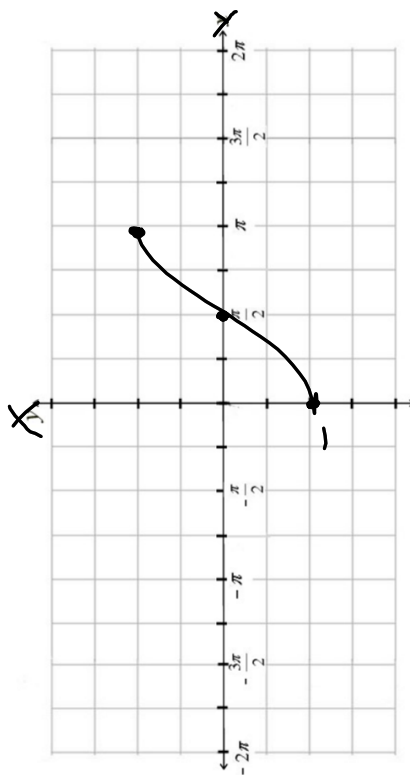
How do you find the inverse given a graph?

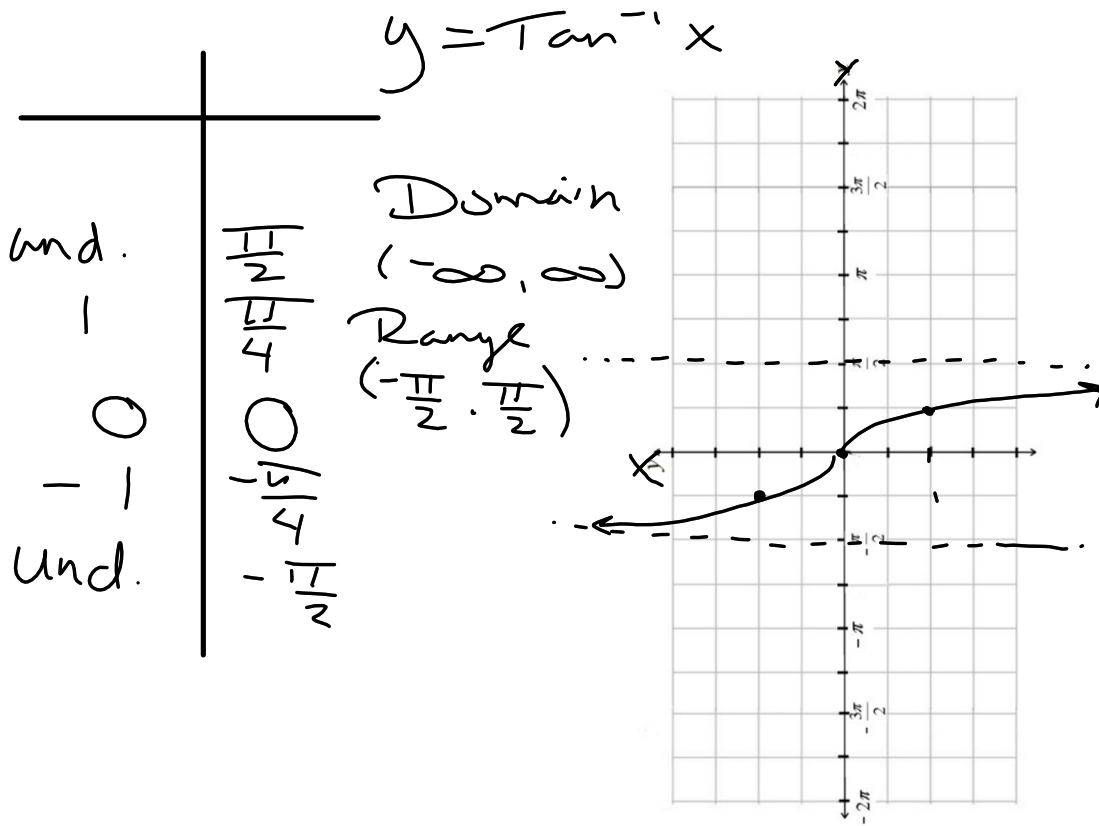
x	$\sin^{-1} x$	$y = \sin^{-1} x$
0	2π	
-1	$\frac{3\pi}{2}$	Domain:
0	π	$[-1, 1]$
-1	$\frac{\pi}{2}$	Range
0	0	$[-\frac{\pi}{2}, \frac{\pi}{2}]$
1	$\frac{\pi}{2}$	
0	0	
-1	$-\frac{\pi}{2}$	
0	0	
1	$\frac{\pi}{2}$	



$y = \cos^{-1}x$

1	2π	Domain
0	$\frac{3\pi}{2}$	
-1	π	$[-1, 1]$
0	$\frac{\pi}{2}$	Range
1	0	
		$[0, \pi)$



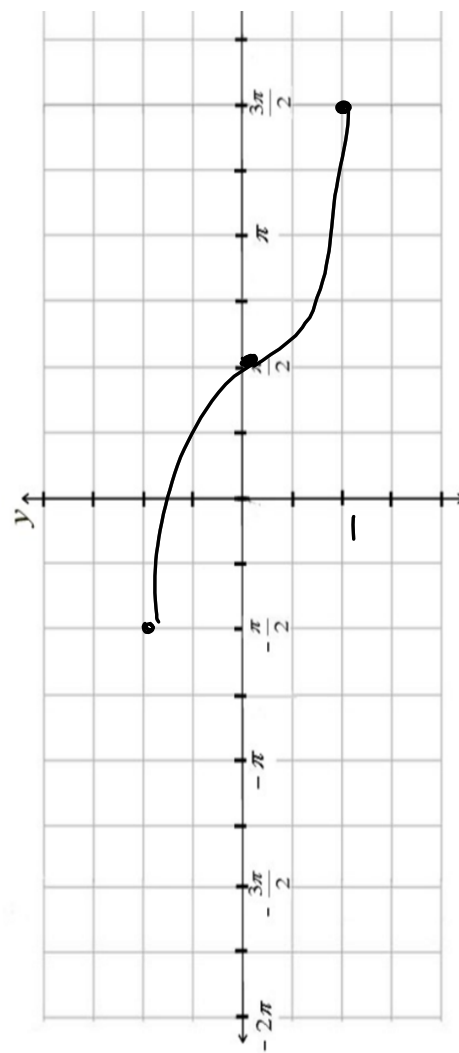


Transform inverse trig.

$$y = 2 \sin^{-1} \Theta + 2$$

\uparrow
 v. stretch

\uparrow
 shift up



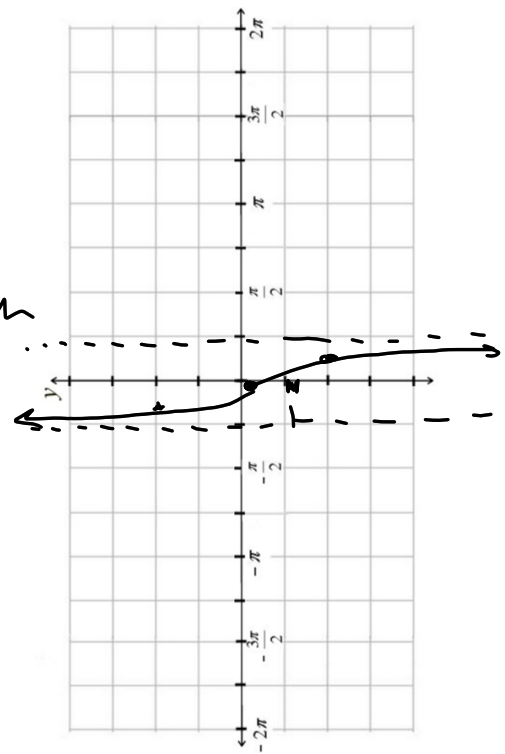
$$y = \frac{1}{2} \tan^{-1} \left(\frac{1}{2} \ominus \right)$$

↑

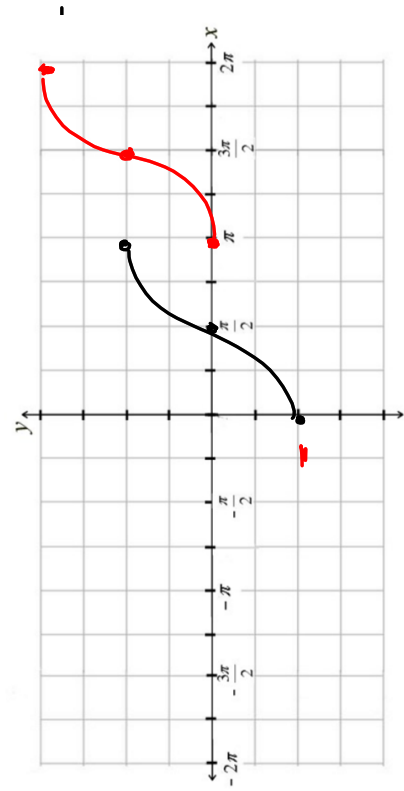
↓ Shrink

↑

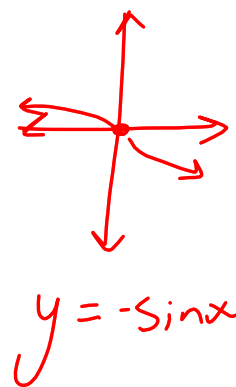
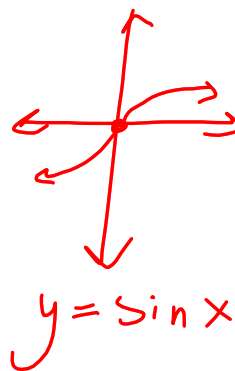
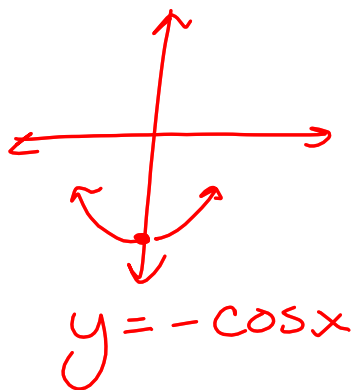
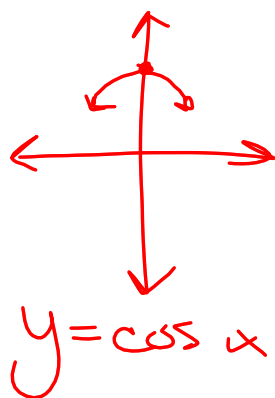
H. Stretch

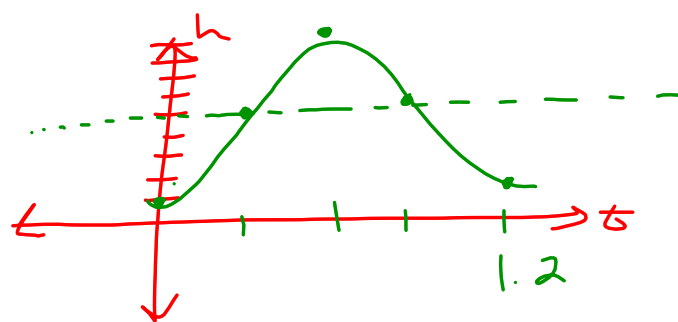
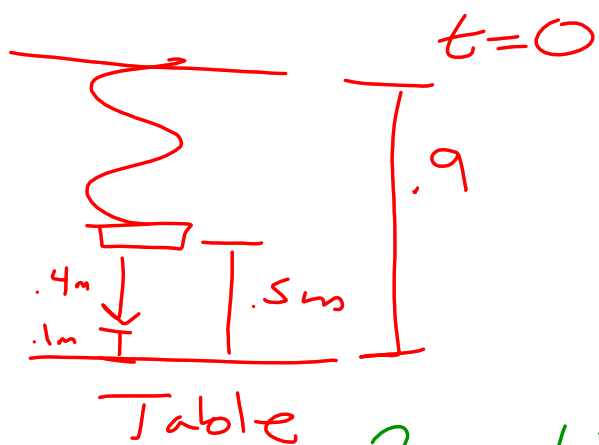


$$y = \cos^{-1}(\theta + 1)$$



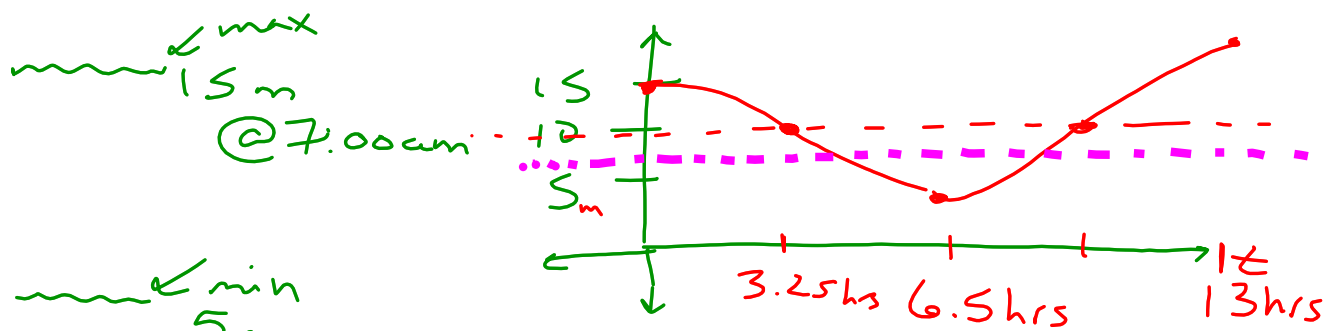
Application packet





$$\frac{2\pi}{b} = 1.2$$

$$y = -.4 \cos(.6x + .5)$$

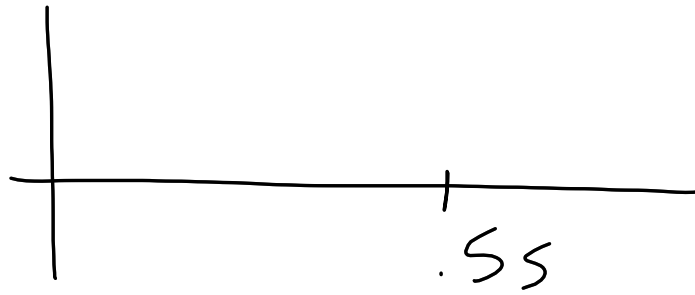
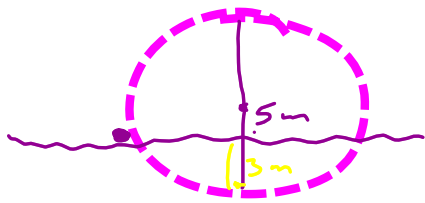


$$\frac{2\pi}{b} = 13$$

$$h = -5 \sin \frac{2\pi}{13} (t - 3.25) + 10$$

$$h(4) \approx 9m$$

t = time away from 7:00

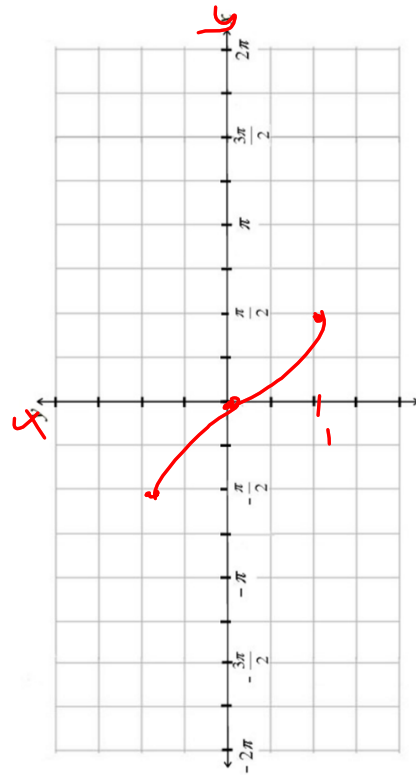


Cycle
Period: .55cc

$$y = \sin^{-1} x$$

Domain
[-1, 1]

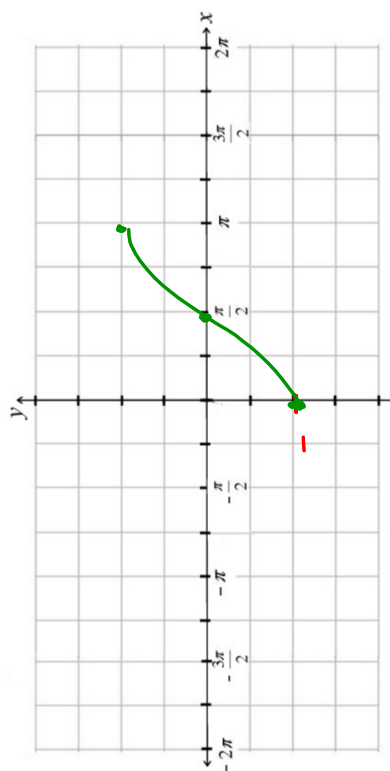
Range
 $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$



$$y = \cos^{-1} x$$

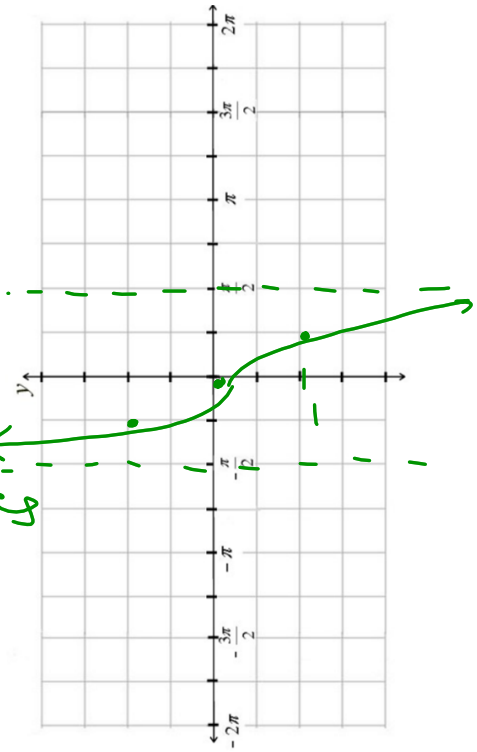
x	y
1	0
0	$\frac{\pi}{2}$
-1	π

Domain
 $[-1, 1]$
 Range
 $[0, \pi]$



$y = \tan^{-1} x$
 Domain $(-\infty, \infty)$

und.	$\frac{\pi}{2}$	Range
-	$\frac{\pi}{4}$	$(-\frac{\pi}{2}, \frac{\pi}{2})$
0	0	Asymptotes
-	$-\frac{\pi}{4}$	$y = \frac{\pi}{2}$
und.	$-\frac{\pi}{2}$	$y = -\frac{\pi}{2}$

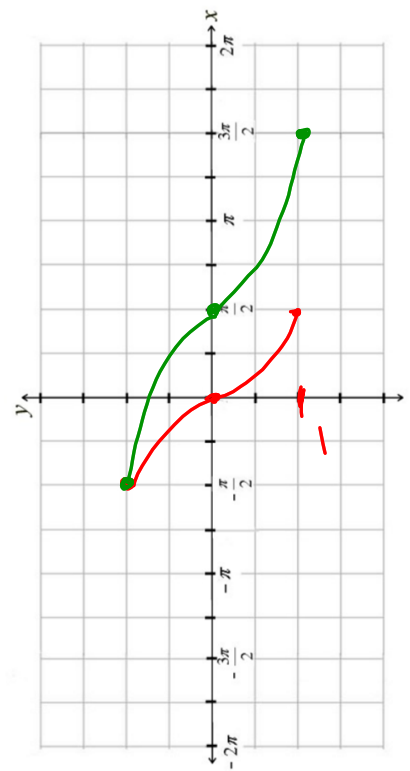


$$y = 2 \sin^{-1} x + \frac{\pi}{2}$$

\uparrow
 V. stretch

\uparrow
 Shift up

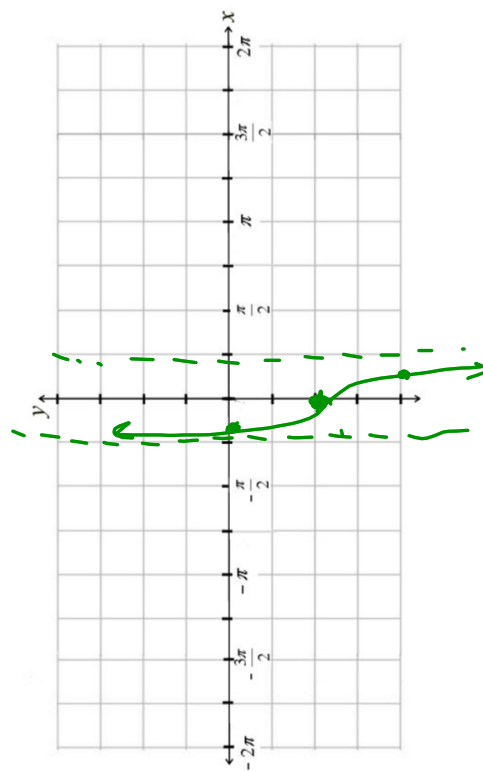
$$y = \sin^{-1} x$$



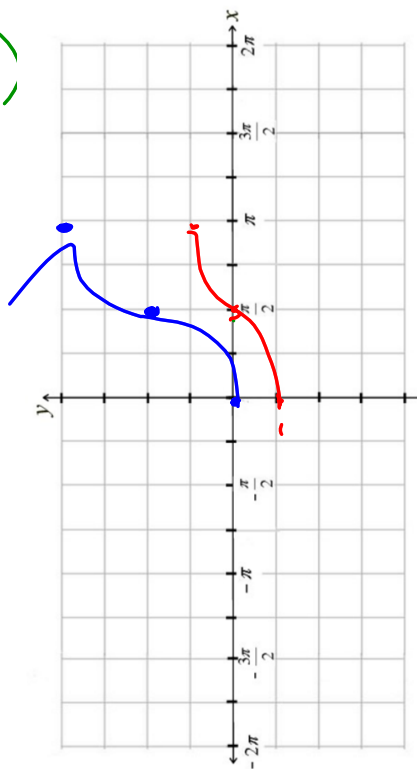
$$y = \frac{1}{2} \tan^{-1}(x-1)$$

\uparrow
 V. Stretch

\uparrow
 R+ Shift



$$y = \cos^{-1} \frac{1}{2}(x + 2)$$



$$y = 2 \sin \dots$$

period

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

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

period 3

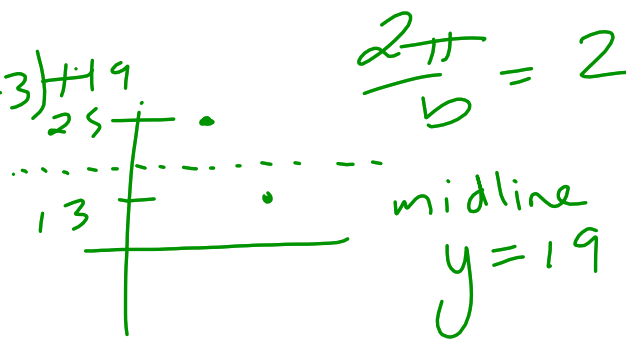
$$y = 5 \cos \dots$$

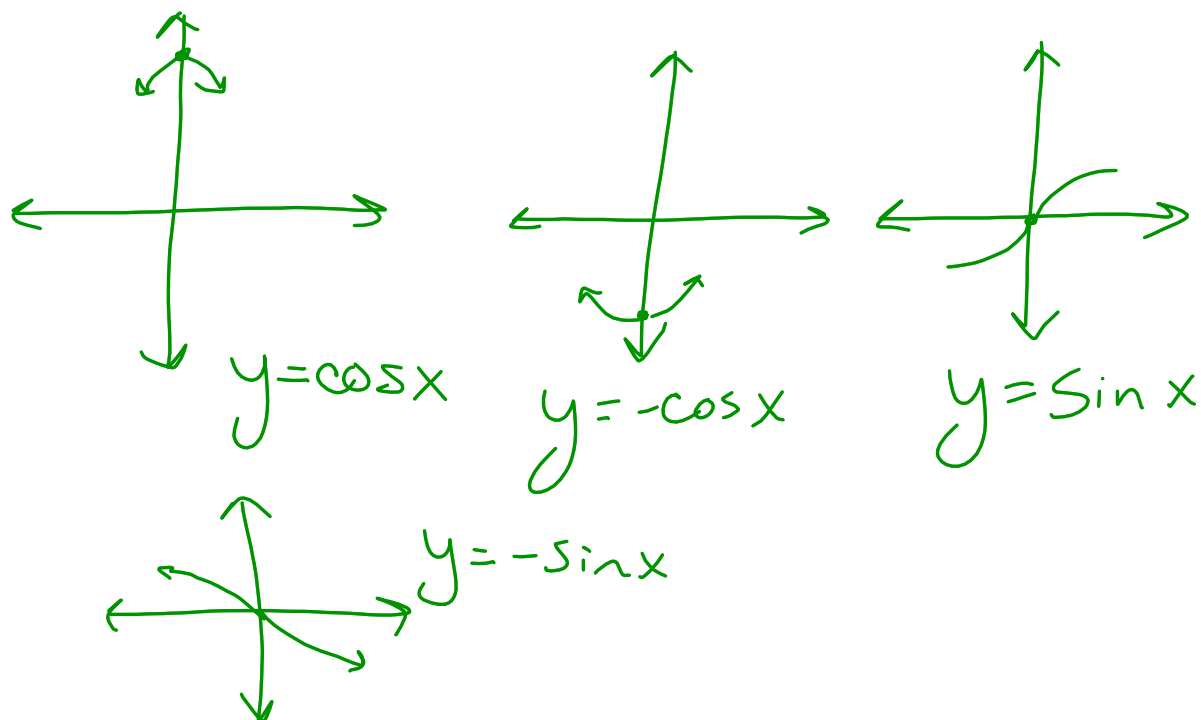
Period 5

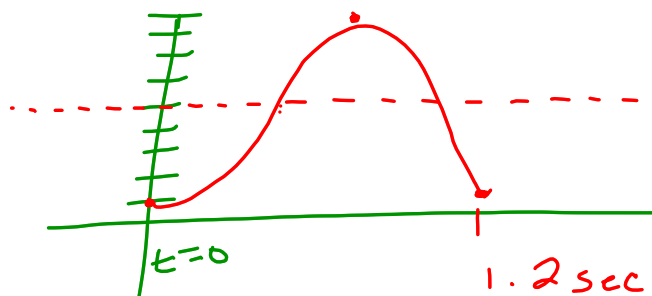
$$a) y = 3 \cos 5\pi(x + 4) + 6$$

$$b) y = 6 \cos \frac{\pi}{3}(x - 3) + 19$$

$$\frac{2\pi}{b} = 6$$







$$y = -4 \cos \frac{5\pi}{3} x + .5$$

$$\frac{2\pi}{b} = 1.2$$

Mat 7:00 am
15 m

Min 1:30 pm
5 m