Quiz tomorrow 7.2

Test   Thurs April 4th
   6.3 – 6.6, 6.8, 7.1 – 7.8   (9Q)
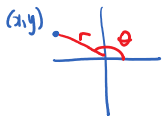Practice Problems   www.leahhoward.com

$A = Pe^{rt}$ and $s = r\theta$ will be provided (if necessary)

Bring music / earplugs

TRIG RECAP

$\sin\theta = \dfrac{O}{H}$
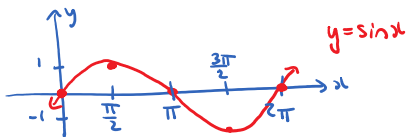
(x,y) $\sin\theta = \dfrac{y}{r}$
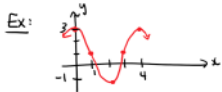
Special case : $r = 1$

(x,y) $\sin\theta = y$

θ	$\sin\theta$
0	0
$\pi/2$	1
π	0
$3\pi/2$	-1
2π	0

→ More
   Commonly

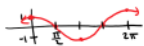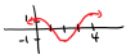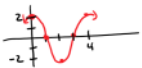| x	$y = \sin x$
0	0
$\pi/2$	1
π	0
$3\pi/2$	-1
2π	0

$y = \sin x$

7.6 Cont'd

Ex:

Write it as $y = A\sin(wx) + C$ or $y = A\cos(wx) + C$

Graphs first
Work backwards to $y = \sin x$ or $y = \cos x$
shift before stretch   (backwards!)

Graph #4 $y = \cos x$
Graph #3 $y = \cos(wx)$
                    Period = 4
                    $\dfrac{2\pi}{w} = 4$
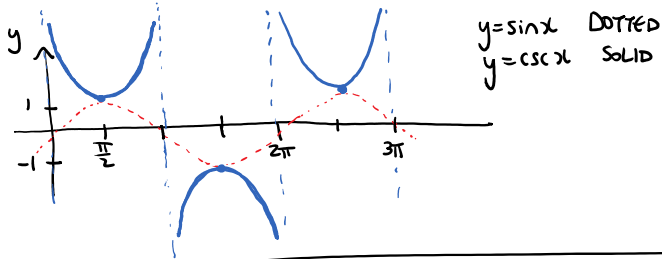
$$\frac{2\pi}{4} = W$$
$$W = \frac{\pi}{2}$$

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

Graph #2 $\qquad y = 2\cos\left(\frac{\pi}{2}x\right)$
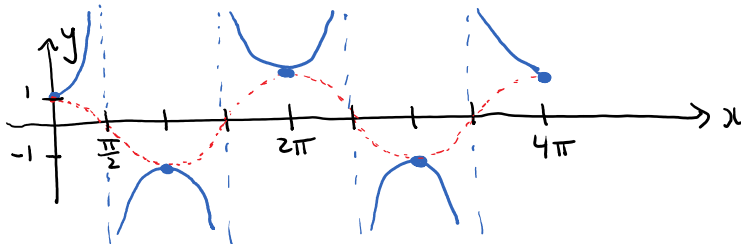
Graph #1 $\qquad y = 2\cos\left(\frac{\pi}{2}x\right) + 1$

7.7 Graphs of Other 4 Trig Functions

$$\boxed{\csc x = \frac{1}{\sin x}}$$

$y = \sin x$ DOTTED
$y = \csc x$ SOLID

Period $\qquad 2\pi$
V.A. $\qquad x = \ldots, -\pi, 0, \pi, 2\pi, \ldots$
Range $\qquad y \geq 1$ or $y \leq -1$

More concisely: $\qquad |y| \geq 1$

Properties of $\quad y = \csc x$

$$\boxed{\sec x = \frac{1}{\cos x}}$$

$y = \cos x$ DOTTED
$y = \sec x$ SOLID

Properties of $y = \sec x$
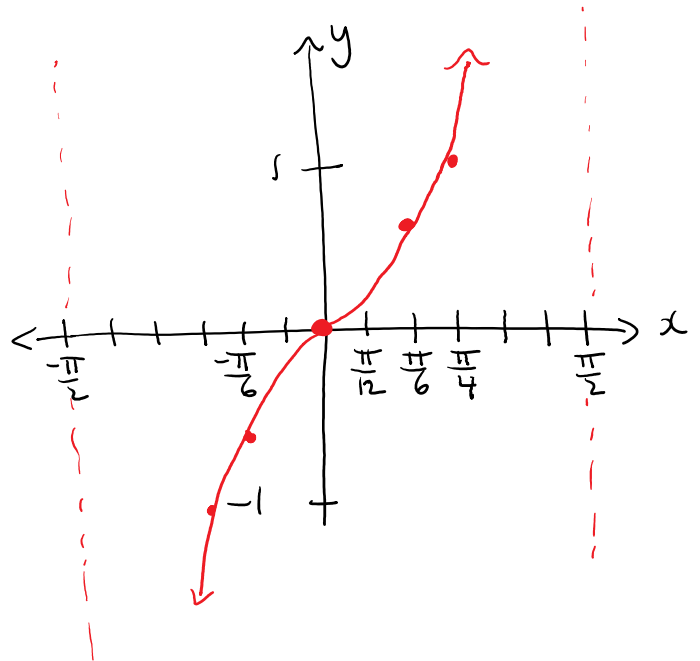
Period	2π
V.A.	$x = \ldots, \frac{-\pi}{2}, \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \ldots$ $\leftarrow$ odd multiples of $\frac{\pi}{2}$
Range	$|y| \geq 1$

$y = \tan x$

x	$y = \tan x$
$-\pi/2$	undefined
$-\pi/4$	-1
$-\pi/6$	-0.6
0	0
$\pi/6$	0.6
$\pi/4$	1
$\pi/2$	undefined

Radian Mode !

Properties of $y = \tan x$

Period	π
Range	$-\infty < y < \infty$
V.A.	$x = \ldots, \frac{-\pi}{2}, \frac{\pi}{2}, \frac{3\pi}{2}, \ldots$
	$x = $ odd multiples of $\frac{\pi}{2}$