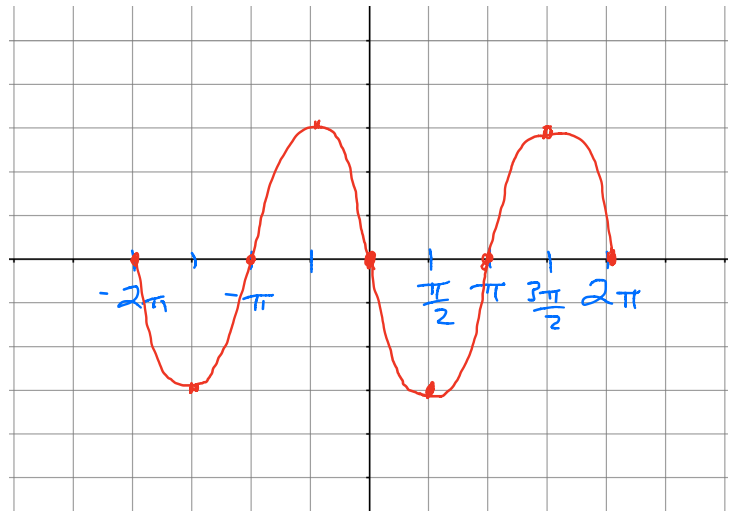
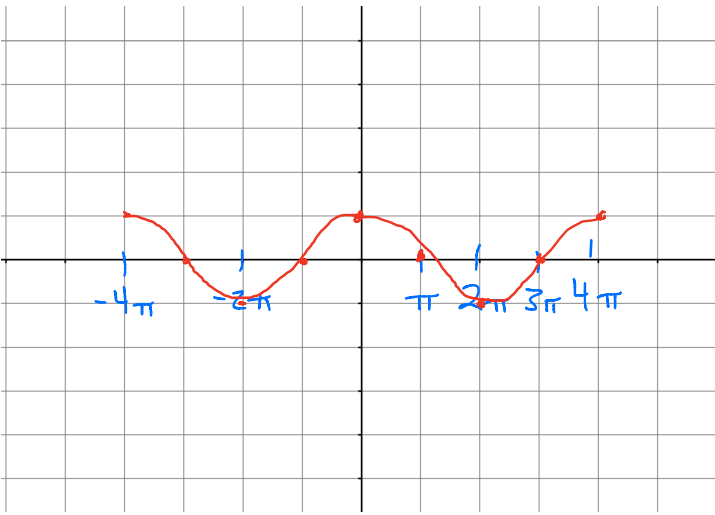


### 7.7 Worksheet Day 1

Name KEY

1. Graph  $f(x) = \cos\left(\frac{1}{2}x\right)$   $P: \frac{2\pi}{\frac{1}{2}} \rightarrow 4\pi$

2. Graph  $f(x) = -3\sin(x)$   $P: \frac{2\pi}{1}$



How do graphs 1 and 2 relate to graphs 3 and 4?

Write the Transformations. Find the Domain, Range, Asymptotes, and Period. Label the axes. Graph at least two cycles of the function.

3.  $h(x) = \tan\left(\frac{1}{2}x\right)$

T: Horizontal Stretch by 2

D:  $\{x \mid x \neq \pi \pm k2\pi\}$  R:  $(-\infty, \infty)$

A:  $\pi \pm k2\pi$  P:  $\frac{\pi}{\frac{1}{2}} = \frac{\pi}{\frac{1}{2}} = 2\pi$

$\theta$	$\tan \theta$
0	0
$\frac{\pi}{2}$	U
$\pi$	0
$\frac{3\pi}{2}$	U
$2\pi$	0

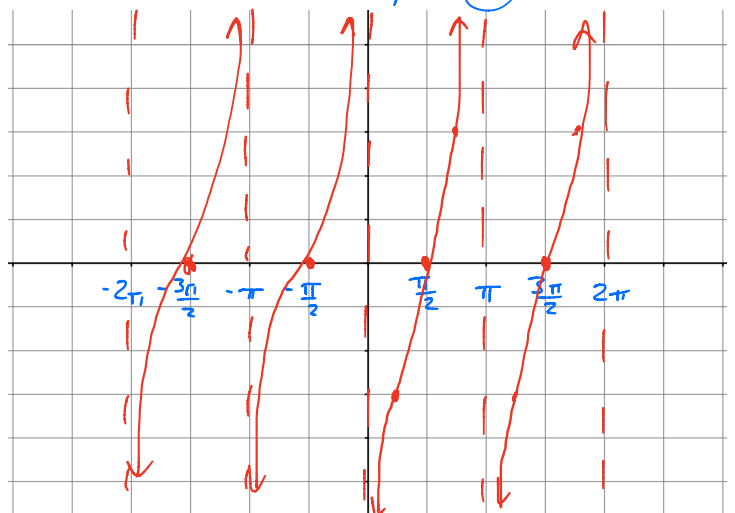
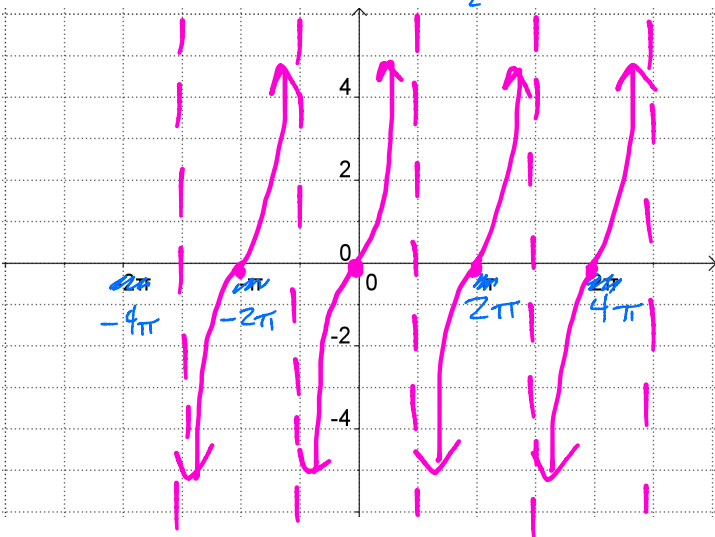
4.  $p(x) = -3 \cot(x)$

T: Reflect over x-axis  
Vertical Stretch by 3

D:  $\{x \mid x \neq 0 \pm k\pi\}$  R:  $(-\infty, \infty)$

A:  $x = 0 \pm k\pi$  P:  $\frac{\pi}{1} = \pi$

$\theta$	$\cot(\theta)$
0	Undef.
$\frac{\pi}{2}$	0
$\pi$	U
$\frac{3\pi}{2}$	0
$2\pi$	U



5.  $f(x) = \tan(x) + 2$

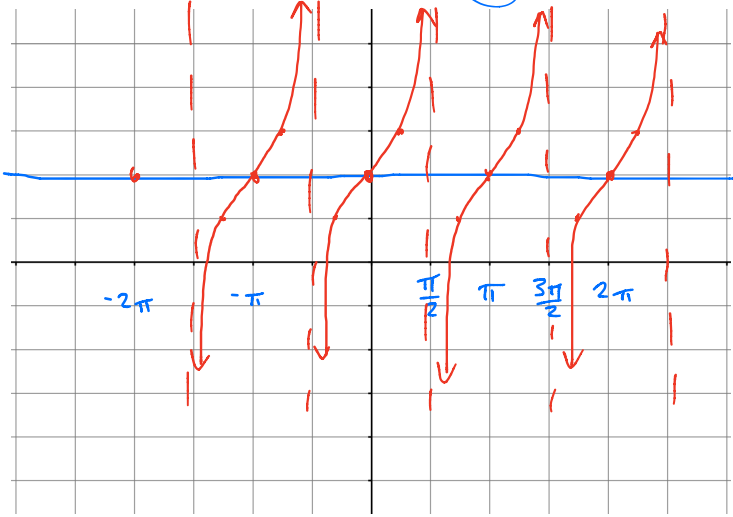
T:

Vert. Shift UP 2

$\theta$	$\tan \theta$
0	0
$\frac{\pi}{2}$	Und.
$\pi$	0
$\frac{3\pi}{2}$	Und.
$2\pi$	0

D:  $\{x | x \neq \frac{\pi}{2} + k\pi\}$  R:  $(-\infty, \infty)$

A:  $x = \frac{\pi}{2} + k\pi$  P:  $\frac{\pi}{1} = \pi$



6.  $g(x) = \cot(x + \frac{\pi}{4})$

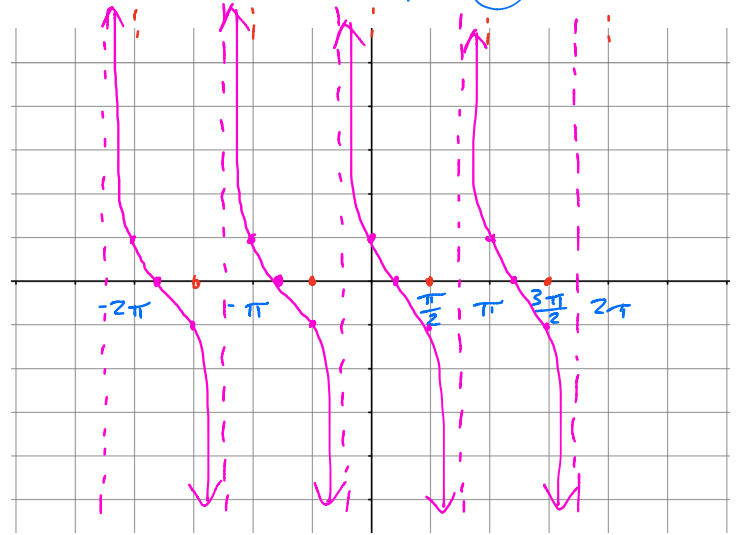
T:

Horizontal Shift Left  $\frac{\pi}{4}$

$\theta$	$\cot \theta$
0	Und.
$\frac{\pi}{2}$	0
$\pi$	Und.
$\frac{3\pi}{2}$	0
$2\pi$	Und.

D:  $\{x | x \neq -\frac{\pi}{4} + k\pi\}$  R:  $(-\infty, \infty)$

A:  $x = -\frac{\pi}{4} + k\pi$  P:  $\frac{\pi}{1} = \pi$



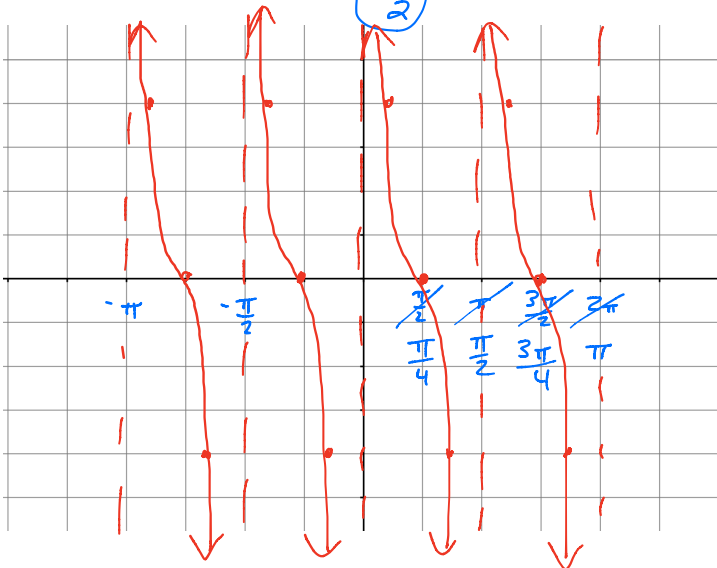
7.  $f(x) = 4 \cot(2x)$

T: Vert. Stretch by 4  
Horizontal Shrink by  $\frac{1}{2}$

$\theta$	$\cot \theta$
0	Und.
$\frac{\pi}{2}$	0
$\pi$	Und.
$\frac{3\pi}{2}$	0
$2\pi$	Und.

D:  $\{x | x \neq 0 + k\frac{\pi}{2}\}$  R:  $(-\infty, \infty)$

A:  $x = 0 + k\frac{\pi}{2}$  P:  $\frac{\pi}{2}$



8.  $q(x) = \tan(x - \frac{\pi}{2}) + 3$

T: Horiz. Shift Right  $\frac{\pi}{2}$   
Vertical Shift Up 3

$\theta$	$\tan \theta$
0	0
$\frac{\pi}{2}$	Und.
$\pi$	0
$\frac{3\pi}{2}$	Und.
$2\pi$	0

D:  $\{x | x \neq 0 + k\pi\}$  R:  $(-\infty, \infty)$

A:  $x = 0 + k\pi$  P:  $\pi$

