Key

Trig Graphing Review Worksheet

1. What happens to the y values of the function $f(x)=\sin x$ as x increases from?

a) 0 to $\frac{\pi}{2}$ inc $0\to 1$

b) $\frac{\pi}{2}$ to π dec $1\to 0$

c) π to $\frac{3\pi}{2}$ dec $0\to -1$

d) $\frac{3\pi}{2}$ to 2π inc $-1\to 0$

2. What happens to the y values of the function $f(x)=\cos x$ as x increases from?

a) 0 to $\frac{\pi}{2}$ dec $1\to 0$

b) $\frac{\pi}{2}$ to π dec $0\to -1$

c) π to $\frac{3\pi}{2}$ inc $-1\to 0$

d) $\frac{3\pi}{2}$ to 2π inc $0\to 1$

3. What happens to the y values of the function $f(x)=\tan x$ as x increases from?

a) 0 to $\frac{\pi}{2}$ inc $0\to \infty$

b) $\frac{\pi}{2}$ to π inc $-\infty\to 0$

c) π to $\frac{3\pi}{2}$ inc $0\to\infty$

d) $\frac{3\pi}{2}$ to 2π inc $-\infty$ to 0

4. How many asymptotes are there from $0\le x\le 2\pi$ for the given function?

a) $y=\csc x$ 3

b) $y=\tan x$ 2

c) $y=\sec(2x)$ 4

d) $y=\tan\left(\frac{1}{2}x\right)$ 1

5. Describe the Domain and the Range of each function.

a) $y=\cos x$
D: $\mathbb{R}$
R: $[-1,1]$

b) $y=\cot x$ $x\neq \pm\pi,\pm 2\pi,\pm 3\pi,\ldots$
D: $x\neq n\pi$ $n\in\mathbb{Z}$
R: $\mathbb{R}$

c) $y=-3\sin\left(4x+\frac{\pi}{12}\right)$
D: $\mathbb{R}$
R: $[-3,3]$

d) $y=2\csc(x-\pi)$
D: $x\neq n\pi$ $n\in\mathbb{Z}$
$x\neq 0,\pm\pi,\pm 2\pi,\ldots$
R: $(-\infty,-2]\,[2,\infty)$

e) $y=3\tan x$
D: $x\neq \frac{(2n+1)\pi}{2}$ $n\in\mathbb{Z}$
$x\neq \pm\frac{\pi}{2},\pm\frac{3\pi}{2},\pm\frac{5\pi}{2},\ldots$
R: $\mathbb{R}$

f) $y=\sec 2x$
D: $x\neq \frac{(2n+1)\pi}{4}$ $n\in\mathbb{Z}$ $x\neq \pm\frac{\pi}{4},\pm\frac{3\pi}{4},\pm\frac{5\pi}{4},\ldots$
R: $(-\infty,-1]\,[1,\infty)$

6. How many periods are there from the given information?

a) $y=-10\sin\left(x+\frac{\pi}{2}\right)$ from $\pi\le x\le 3\pi$ 1

b) $y=\sec(4x)$ from $-2\pi\le x\le 2\pi$ 8

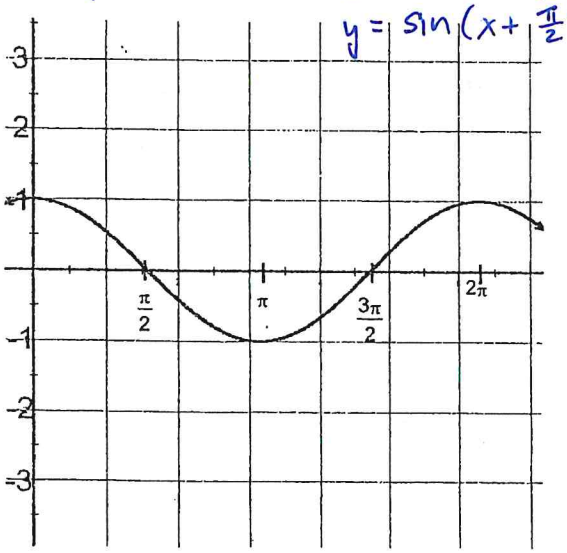
Write two equations for each graph, using the given functions.

7. a) cos x b) sin x

$y = \cos x$

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

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

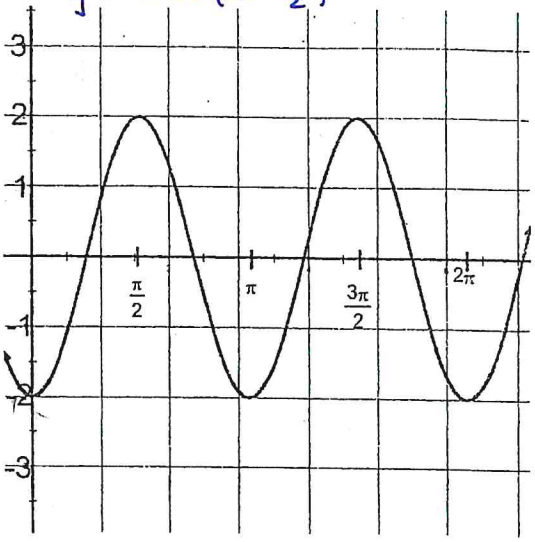


8. a) − sin x b) - cos x

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

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

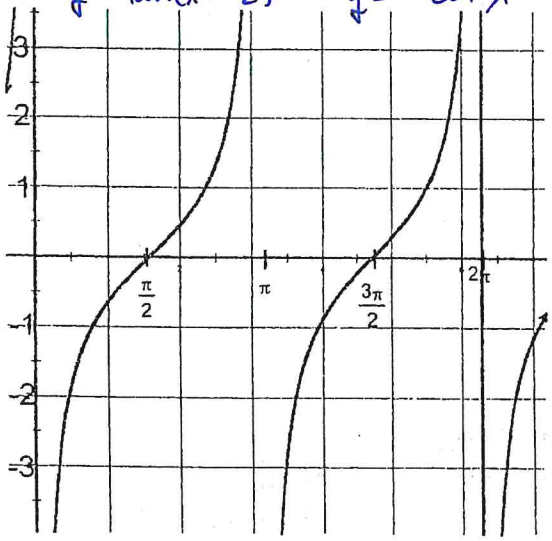
$y = -2\cos(2x)$



9. a) tan x b) cot x

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

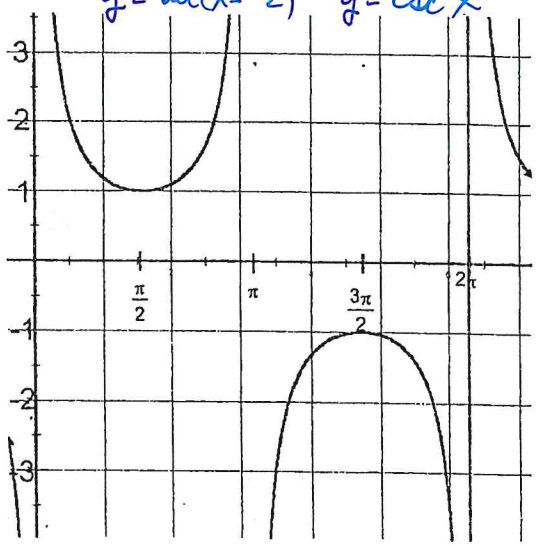
$y = -\cot x$



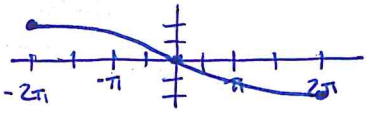
10. a) sec x b) csc x

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

$y = \csc x$



11. Graph $y = -2\sin\left(\frac{x}{4}\right)$ from $-2\pi \le x \le 2\pi$.



12. Graph $y = 3\cos\left(3x - \frac{\pi}{2}\right) + 2$ from $-\pi \le x \le \pi$.