Review for Sections 4.4-4.6

Precalculus w/Trig

Name KEY
Period_____

1. Fill in the chart with the letter of the appropriate answer using the following:

A. $(-\infty,\infty)$

B. $x \neq \frac{(2n+1)\pi}{2}$, *where* $n \in \{\text{integers}\}$ ($\frac{\pi}{2}+n\pi$)

C. $x \neq n\pi$, *where* $n \in \{\text{integers}\}$

D. $[-1,1]$

E. $(-\infty,-1]\cup[1,\infty)$

F. It is an odd function

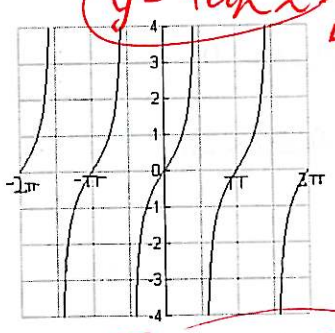
G. It is an even function

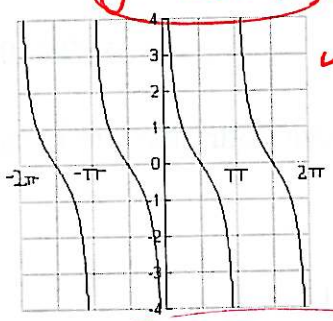
H. 2π

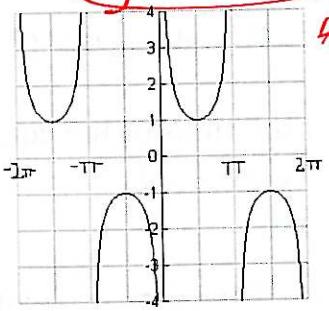
I. π

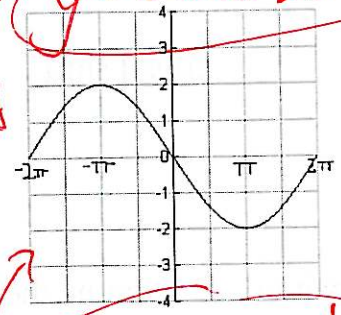
	Domain	Range	Even/Odd	Period
y=sin x	A	D	F	H
y=cos x	A	D	G	H
y=tan x	B	A	F	I
y=csc x	C	E	F	H
y=sec x	B	E	G	H
y=cot x	C	A	F	I

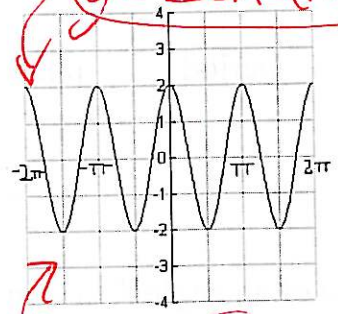
2. Write the equation of each of the following graphs:

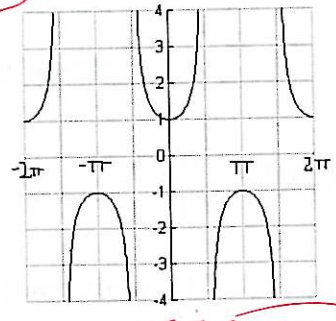












3. Graph the following equation, labeling all x-intercepts, y-intercept, relative maxima, relative minima, and vertical asymptotes.

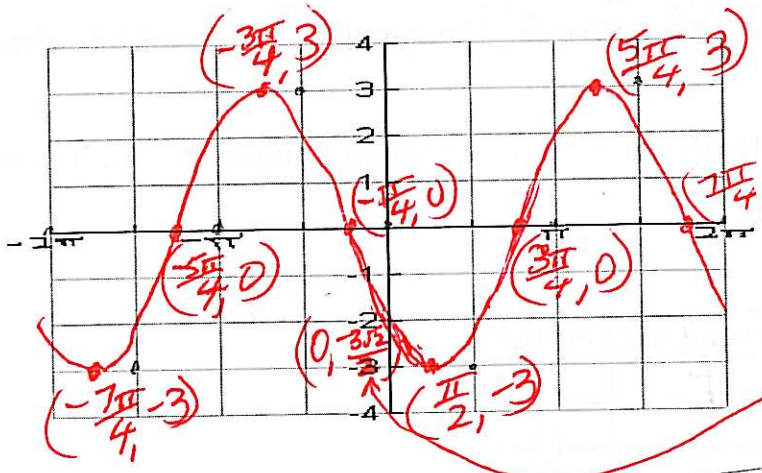
$$y = -3\sin\left(x + \frac{\pi}{4}\right)$$

SET $x=0$

$y = -3\sin\left(\frac{\pi}{4}\right)$

$y = -3\left(\frac{\sqrt{2}}{2}\right)$

$y = -\frac{3\sqrt{2}}{2}$



4. Give the equation of the cosine function that has a phase shift of right $\frac{\pi}{4}$, a vertical shift of down 2, a period of π, and amplitude of 3.

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

$y = 3\cos 2\left(x - \frac{\pi}{4}\right) - 2$

5. State the quadrant(s) in which θ lies.

a) $\sec\theta > 0$ and $\tan\theta < 0$ IV

b) $\sin\theta > 0$ and $\cot\theta < 0$ II

c) $\csc\theta > 0$ and $\tan\theta > 0$ I

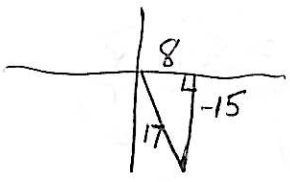
d) $\sec\theta > 0$ and $\cos\theta > 0$ I, IV

6. Find two solutions of the equation. Give your answers in radians $(0 \le \theta < 2\pi)$

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

$\cos\theta = \frac{1}{-\sqrt{2}} = \frac{-\sqrt{2}}{2}$ 45° II, III → $\frac{3\pi}{4}, \frac{5\pi}{4}$ Answers

7. Find $\sin\theta$ if $\tan\theta = -\frac{15}{8}$ in quadrant IV.



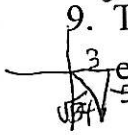
$\sin\theta = \frac{-15}{17}$

8. $y = 3 - \cos\left(8x + \frac{\pi}{4}\right)$

amplitude	period	phase shift	vertical shift
1	$\frac{2\pi}{8} = \frac{\pi}{4}$	LEFT $\frac{\pi}{32}$	up 3

$y = -\cos 8\left(x + \frac{\pi}{32}\right) + 3$

9. The point $(3,-5)$ is on the terminal side of an angle θ in standard position. Determine the exact values of these trig functions of the angle θ.



a) $\sin\theta = \frac{-5}{\sqrt{34}} = \frac{-5\sqrt{34}}{34}$ b) $\cos\theta = \frac{3}{\sqrt{34}} = \frac{3\sqrt{34}}{34}$ c) $\tan\theta = \frac{-5}{3}$ d) $\csc\theta = \frac{\sqrt{34}}{5}$ e) $\sec\theta = \frac{\sqrt{34}}{3}$