Name: Solutions Period: _____ Date: _____ Mrs. Paunovska – Analysis of Functions

The Trigonometric Functions (5-3 Part 1)
Quiz 3 (Q2)– Practice Quiz – Open Notes

Directions:

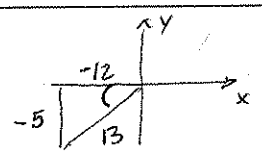
1) YOU MAY USE A GRAPHIC CALCULATOR. YOU MAY USE YOUR NOTES.
2) MUST BE DONE IN PENCIL.
3) TOTAL POSSIBLE POINTS - 48

I. *Identify which of the main trigonometric are negative for each quadrant (4pts)*

Quadrant I : negative : None
Quadrant II : negative : tan, cot, cos, sec
Quadrant III : negative : sin, csc, cos, sec
Quadrant IV : negative : sin ; csc, tan, cot

II. Find the 6 trigonometric function values for the given point in the terminal side of the angle, θ (12 pts)

1. (-12, -5)



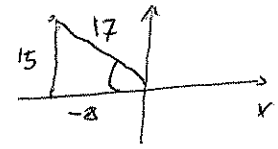
$\sin\theta = \frac{-5}{13}$ $\csc\theta = -\frac{13}{5}$

$\cos\theta = \frac{-12}{13}$ $\sec\theta = -\frac{13}{12}$

$\tan\theta = \frac{5}{12}$ $\cot\theta = \frac{12}{5}$

III

2. (-8,15)



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

$\cos\theta = \frac{-8}{17}$ $\sec\theta = -\frac{17}{8}$

$\tan\theta = \frac{-15}{8}$ $\cot\theta = \frac{-8}{15}$

II

III. State the quadrant(s) or axis in which θ terminates based on the given information (12pts)

3. $\cot\theta < 0$

II and IV

4. $\csc\theta > 0$ *and* $\cos\theta < 0$

I II II IV

II

5. $\tan\theta > 0$ *and* $\cos\theta < 0$

III

6. $\sin\theta = -1$

y-axis (negative part)

7. $\csc\theta$ *is undefined*

$\csc\theta = \frac{1}{\sin\theta} = \frac{1}{0}$

$\sin\theta = 0$ ($x=0 \rightarrow$ y-axis)

8. $\cot\theta = 0$

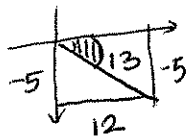
$\frac{\cos\theta}{\sin\theta} = 0$ $\cos\theta = 0$

$y = 0 \rightarrow$ x-axis

IV. Given the provided information, find the exact values of the other five trigonometric functions. (12 pts)

9. $\cos\theta = \frac{12}{13}$ *and* $\tan\theta < 0$

IV



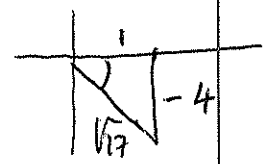
$\sin\theta = \frac{-5}{13}$ $\quad \csc\theta = -\frac{13}{5}$

$\cos\theta = \frac{12}{13}$ $\quad \sec\theta = \frac{13}{12}$

$\tan\theta = \frac{-5}{12}$ $\quad \cot\theta = -\frac{12}{5}$

10. $\cot\theta = \frac{-1}{4}$ *and* $\sec\theta > 0$

IV



$\sin\theta = \frac{-4\sqrt{17}}{17}$ $\quad \csc\theta = \frac{-\sqrt{17}}{4}$

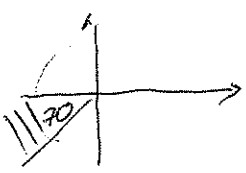
$\cos\theta = \frac{\sqrt{17}}{17}$ $\quad \sec\theta = \sqrt{17}$

$\tan\theta = -4$ $\quad \cot\theta = \frac{-1}{4}$

V. A reference angle is the acute (now negative) *angle formed by the* terminal *side of any angle in* standard *position and the nearest portion of the* x-axis. *(4 pts)*

VI. State the reference angle. Keep radians in radians and degrees in degrees. (4pts)

15. 250°	16. $\frac{8\pi}{5}$	17. -200	18. $\frac{3\pi}{4}$
70°	$\frac{2\pi}{5}$	20°	



$250^\circ - 180^\circ = 70^\circ$