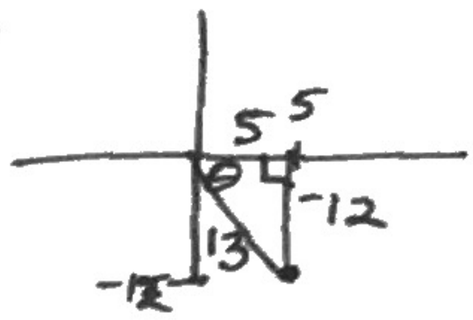
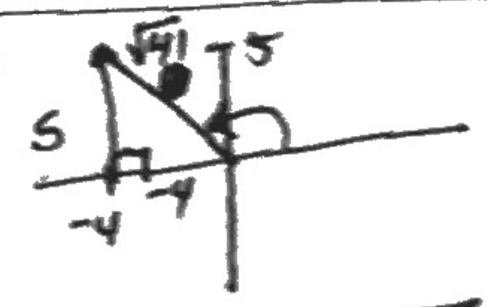
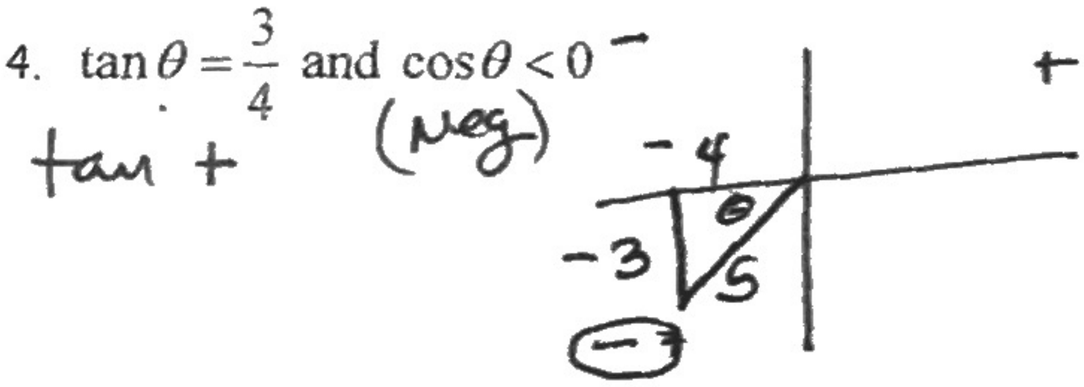
Pre-Calculus Worksheet Due: Sept. 16/17 Name: _____

#8 Trig Unit Circle DAY 1 Period: ____

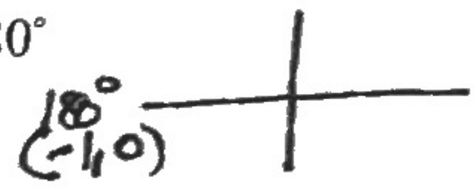
I. Find the 6 trigonometric function values for the given point on the terminal side of the angle, θ.

1. $(5,-12)$ 	2. $(-24,-7)$	3. $(-4,5)$  $\frac{5}{\sqrt{41}}, \frac{\sqrt{41}}{\sqrt{41}} =$
$\sin\theta = \frac{-12}{13}$ $\csc\theta = \frac{-13}{12}$	$\sin\theta = \frac{-7}{25}$ $\csc\theta =$	$\sin\theta = \frac{5\sqrt{41}}{41}$ $\csc\theta = \frac{\sqrt{41}}{5}$
$\cos\theta = \frac{5}{13}$ $\sec\theta = \frac{13}{5}$	$\cos\theta =$ $\sec\theta =$	$\cos\theta = \frac{-4\sqrt{41}}{41}$ $\sec\theta = \frac{-\sqrt{41}}{4}$
$\tan\theta = \frac{-12}{5}$ $\cot\theta = \frac{-5}{12}$	$\tan\theta =$ $\cot\theta =$	$\tan\theta = \frac{-5}{4}$ $\cot\theta = \frac{-4}{5}$

II. Given the provided information, find the exact values of the other five trigonometric functions.

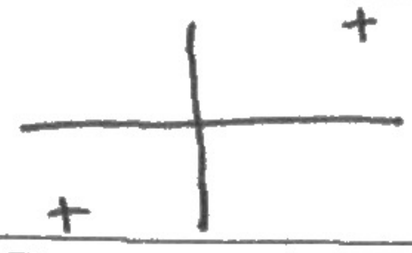
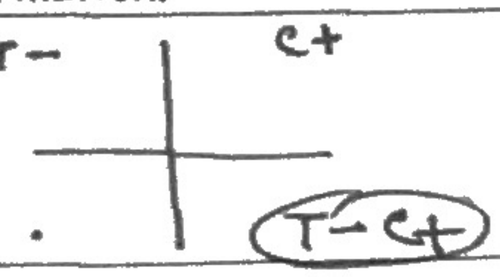
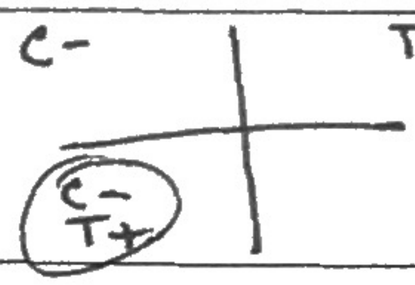
4. $\tan\theta = \frac{3}{4}$ and $\cos\theta < 0$ 	5. $\csc\theta = -\frac{\sqrt{5}}{2}$ and $\sec\theta > 0$
$\sin\theta = \frac{-3}{5}$ $\cos\theta = \frac{-4}{5}$ $\tan\theta = \frac{3}{4}$	$\sin\theta = \frac{-2\sqrt{5}}{5}$ $\cos\theta =$ _____ $\tan\theta =$ _____
$\csc\theta = \frac{-5}{3}$ $\sec\theta = \frac{-5}{4}$ $\cot\theta = \frac{4}{3}$	$\csc\theta =$ _____ $\sec\theta =$ _____ $\cot\theta =$ _____

III. Evaluate the six trigonometric function values for each quadrantal angle.

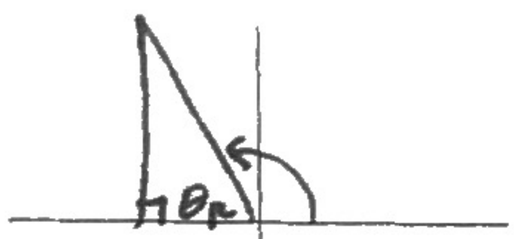
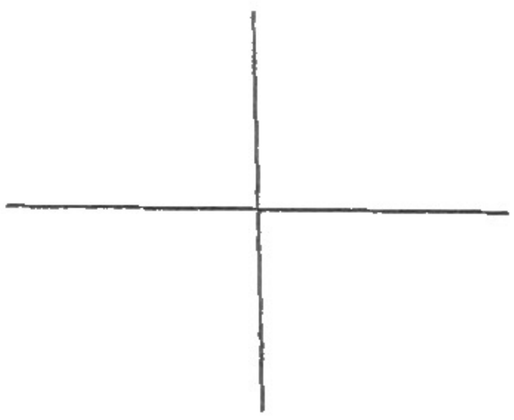
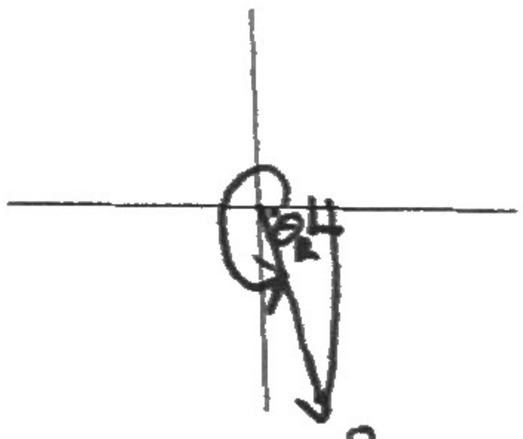
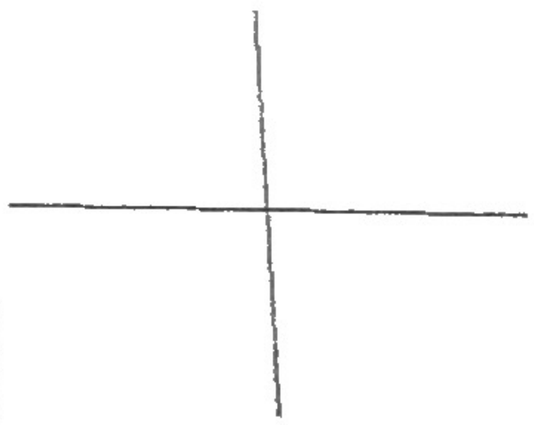
6. $\theta = 180^\circ$  $\tan\theta = \frac{0}{-1}$	7. $\theta = -\frac{3\pi}{2}$
$\sin\theta = 0$ $\cos\theta = -1$ $\tan\theta = 0$	$\sin\theta =$ _____ $\cos\theta =$ _____ $\tan\theta =$ _____
$\csc\theta =$ und. $\sec\theta = -1$ $\cot\theta =$ und.	$\csc\theta =$ _____ $\sec\theta =$ _____ $\cot\theta =$ _____
8. $\theta = 8\pi$ 	9. $\theta = -450^\circ$
$\sin\theta = 0$ $\cos\theta = 1$ $\tan\theta = 0$	$\sin\theta =$ _____ $\cos\theta =$ _____ $\tan\theta =$ _____
$\csc\theta =$ und. $\sec\theta = 1$ $\cot\theta =$ und.	$\csc\theta =$ _____ $\sec\theta =$ _____ $\cot\theta =$ _____

Draw a figure

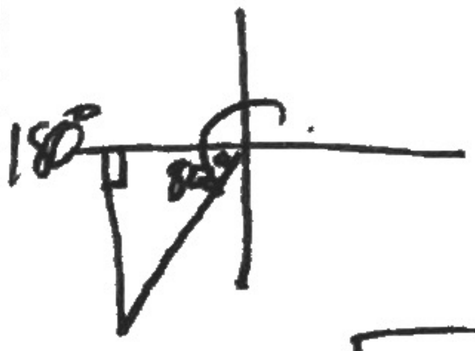
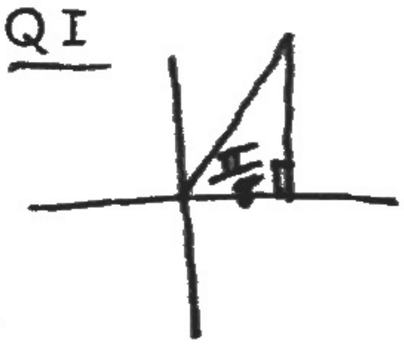
IV. State the quadrant(s) or axis in which θ terminates based on the given information.

10. $\tan\theta > 0$ I, III  	11. $\tan\theta < 0$ and $\cos\theta > 0$ T− IV 
12. $\csc\theta < 0$ and $\cot\theta < 0$ Sin, y, ÷ − tan − II  	13. $\sin\theta > 0$ and $\sec\theta > 0$
14. $\sin\theta = 0$  Neg / pos. x-axis	15. $\sec\theta$ is undefined
16. $\sec\theta < 0$ and $\tan\theta > 0$ cos − tan + "X" III  	17. $\cot\theta = 0$

V. Sketch the angle in standard position. Then shade in the reference angle and give its measure. **Keep radians in radians and degrees in degrees.**

18. 100°  $\theta_R = 80^\circ$	19. -135°  $\theta_R = 45^\circ$	20. 275°  $\theta_R = 85^\circ$	21. $-\frac{7\pi}{4}$  $\boxed{\theta_R = \frac{\pi}{4}}$

VI. Give the measure of an angle that has the given reference angle and that terminates in the designated quadrant. **Keep radians in radians and degrees in degrees.** A sketch may help.

22. 80°; terminates in Q III  $180^\circ + 80^\circ = \boxed{260^\circ}$	23. $\frac{\pi}{8}$; terminates in Q I  $\boxed{\frac{\pi}{8}}$	24. 50°; terminates in Q II	25. $\frac{\pi}{3}$; terminates in Q IV