Pre-Calculus Worksheet Due: Sept. 22/23 Name: _____

#10 Trig Unit Circle DAY 3 Sec 4.3 Period: ____

I. Find the exact value of the requested trig. functions by using the given trig. function value and whether the function is EVEN or ODD.

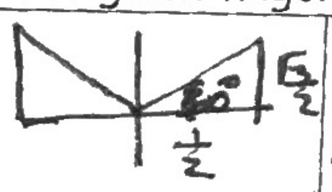
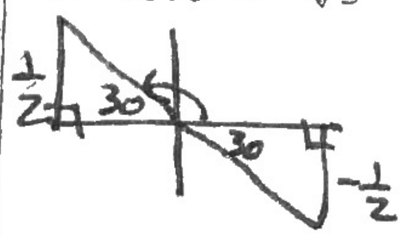
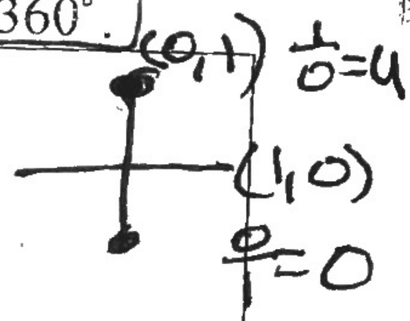
1. $\cos\theta = \frac{8}{9}$ Find $\cos(-\theta)$ and $\sec(-\theta)$.	2. $\tan\theta = -\frac{3}{4}$ Find $\tan(-\theta)$ and $\cot\theta$.	3. $\csc\theta = -\frac{11}{5}$ Find $\csc(-\theta)$ and $\sin\theta$.

II. Use a calculator to evaluate each value to four decimal ~~places~~.

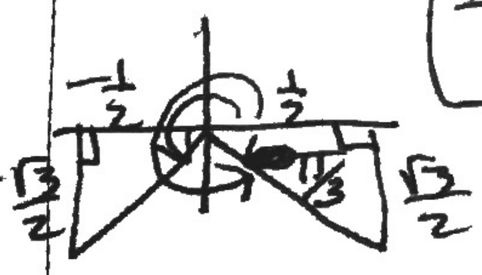
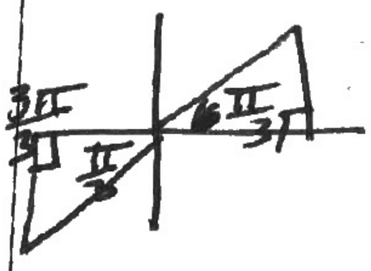
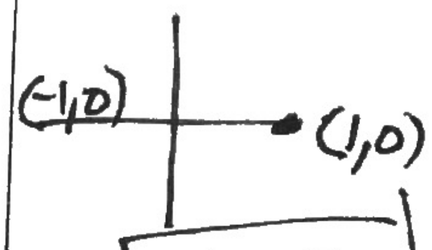
4. $\sin 567^\circ = -.4540$ degree	5. $\cot\left(-\frac{14\pi}{9}\right)$ Radians $\frac{1}{\tan\left(-\frac{14\pi}{4}\right)} =$	6. $\tan 1325^\circ = 2.1445$ degree
7. $\tan\frac{11\pi}{20} =$ Radians	8. $\csc(-378^\circ)$ degree $\frac{1}{\sin(378^\circ)} = -3.2361$	9. $\sec\frac{21\pi}{19}$ radians

No calculator

III. Find θ with the given trigonometric values. Give your answer in degrees, where $0^\circ \le \theta < 360^\circ$.

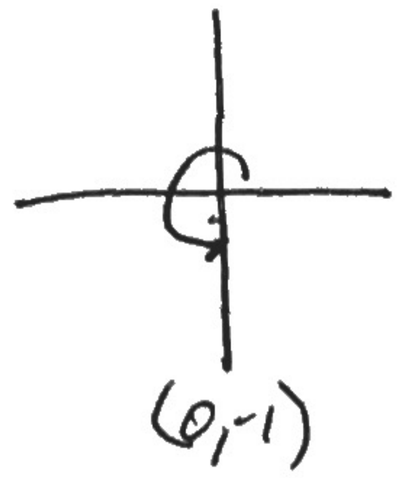
10. $\cos\theta = -\frac{1}{2}$  $\theta = 60^\circ$	11. $\cot\theta = -\sqrt{3}$ $\boxed{150^\circ \text{ and } 300^\circ}$ 	12. $\tan\theta = undefined$ 90° and 270° 

IV. Find θ with the given trigonometric values. Give your answer in radians, where $0 \le \theta < 2\pi$.

13. $\sin\theta = -\frac{\sqrt{3}}{2}$ $\boxed{\frac{4\pi}{3}, \frac{5\pi}{3}}$ 	14. $\tan\theta = \sqrt{3}$ $\boxed{\frac{\pi}{3}, \frac{4\pi}{3}}$ 	15. $\sin\theta = 0$  $\boxed{0, \pi}$

V. Given θ, use reference angles and the unit circle to find the exact value for each trig. function.

16. $\theta = 270^\circ$

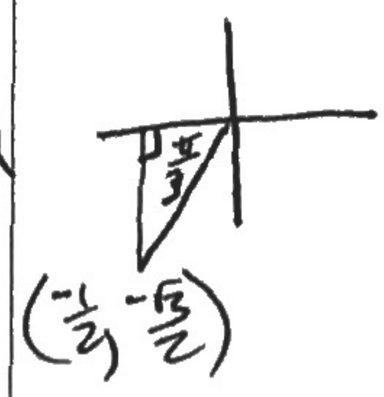


$\sin\theta = -1$ $\csc\theta = -1$

$\cos\theta = 0$ $\sec\theta =$ und

$\tan\theta =$ und $\cot\theta = 0$

17. $\theta = -\frac{2\pi}{3}$

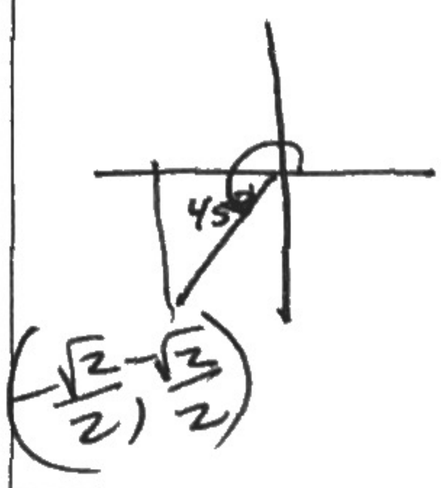


$\sin\theta = -\frac{\sqrt{3}}{2}$ $\csc\theta = \frac{-2\sqrt{3}}{3}$

$\cos\theta = -\frac{1}{2}$ $\sec\theta = -2$

$\tan\theta = \sqrt{3}$ $\cot\theta = \frac{\sqrt{3}}{3}$

18. $\theta = 225^\circ$

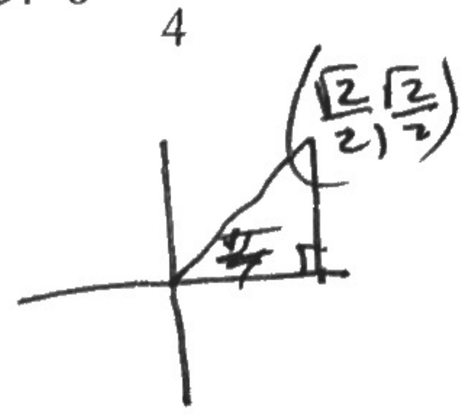


$\sin\theta = \frac{-\sqrt{2}}{2}$ $\csc\theta = -\sqrt{2}$

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

$\tan\theta = 1$ $\cot\theta = 1$

19. $\theta = \frac{\pi}{4}$

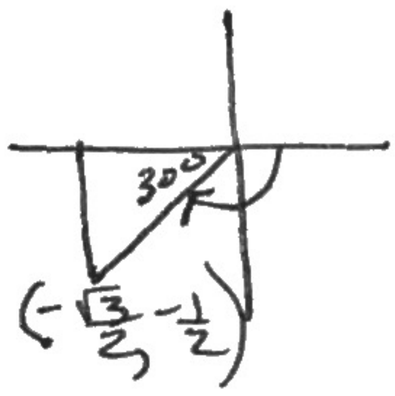


$\sin\theta =$ $\csc\theta =$

$\cos\theta =$ $\sec\theta =$

$\tan\theta =$ $\cot\theta =$

20. $\theta = -150^\circ$

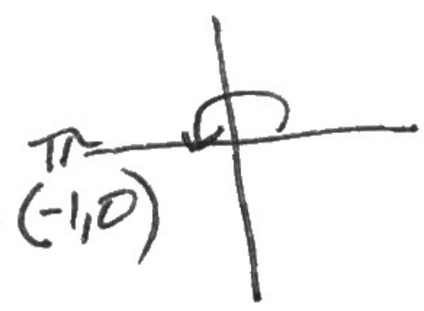


$\sin\theta = -\frac{1}{2}$ $\csc\theta = -2$

$\cos\theta = -\frac{\sqrt{3}}{2}$ $\sec\theta = -\frac{2\sqrt{3}}{3}$

$\tan\theta = \frac{\sqrt{3}}{3}$ $\cot\theta = \sqrt{3}$

21. $\theta = \pi$



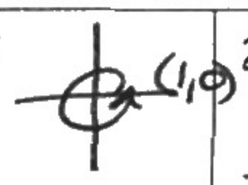
$\sin\theta =$ $\csc\theta =$

$\cos\theta =$ $\sec\theta =$

$\tan\theta =$ $\cot\theta =$

VI. Evaluate. Give the exact simplified value. (NO decimals and NO calculators!)

22. $\sec 2\pi$

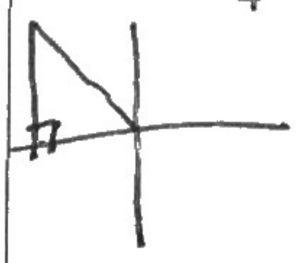


$\cos 2\pi = 1$

$\boxed{\sec 2\pi = 1}$

23. $\cos 210^\circ = -\frac{\sqrt{3}}{2}$

24. $\tan\frac{3\pi}{4} =$



25. $\cot\frac{10\pi}{3} =$

think

$\tan\frac{10\pi}{3} =$

Flip.

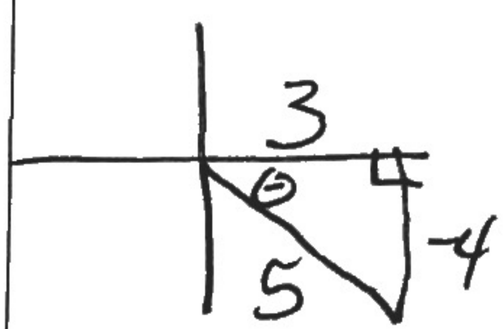
26. $\csc(-225^\circ)$

$\sin(-225) = \frac{\sqrt{2}}{2}$

$\boxed{\csc(-225) = \sqrt{2}}$

VI. Find the exact values of the 6 trigonometric functions, given...

27. $\sin\theta = -\frac{4}{5}$; Quadrant IV

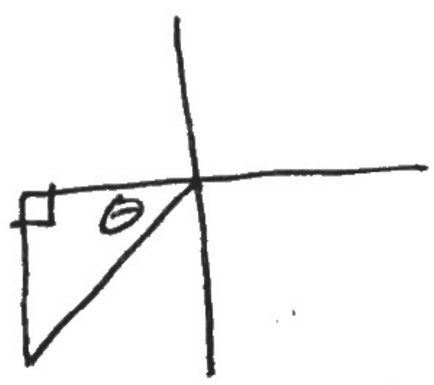


$\sin\theta = \frac{-4}{5}$ $\csc\theta = \frac{-5}{4}$

$\cos\theta = \frac{3}{5}$ $\sec\theta = \frac{5}{3}$

$\tan\theta = \frac{-4}{3}$ $\cot\theta = \frac{-3}{4}$

28. $\tan\theta = \frac{3}{5}$; Quadrant III



$\sin\theta =$ $\csc\theta =$

$\cos\theta =$ $\sec\theta =$

$\tan\theta =$ $\cot\theta =$