Trigonometry
Quiz 2
Sept 17, 2009
Covering A1 – A5

Name KEY

1. An angle θ in standard position whose measure is $14{,}279^o$ has its terminal side in which quadrant.?

$$\frac{14{,}279}{} \Big| \frac{1 \text{ rot}}{360^\circ} \rightarrow 39.663 \quad \text{III}$$

$.5 < .663 < .75$

2. Consider an angle θ in standard position whose measure is 420°. What is the measure of this angle in radians? Give the exact value, not a decimal approximation.

$$\frac{420^\circ}{} \Big| \frac{\pi}{180^\circ} = \frac{7\pi}{3}$$

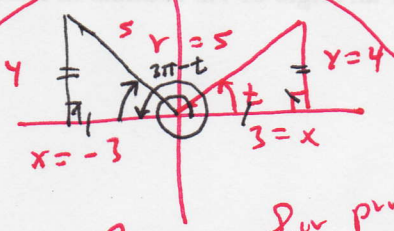
-2 if no "π"

3. Determine correct to 4 decimal places: csc(-2.5 radians). Note that I changed the angle to a negative quantity. A calculator might prove helpful.

$$\csc(-2.5) = \frac{1}{\sin(2.5)} = -1.67$$

4. Find the radian measure of the central angle of a circle whose radius is 16 cm that intercepts an arc of length 40 cm.

$$s = r\theta$$
$$\frac{s}{r} = \theta$$
$$\frac{40\text{ cm}}{16\text{ cm}} = 2.5 \text{ radians}$$

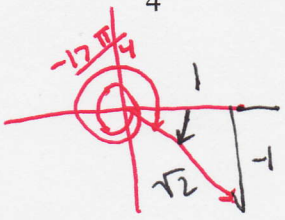


for prob 5.

5. Suppose $\cos(t) = \frac{3}{5}$, and further suppose if t is drawn in standard position, the terminal side of t lies in quad I. Use this fact to determine $\sin(3\pi - t)$.

$\frac{4}{5}$

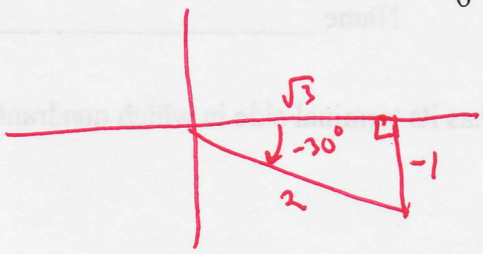
6. Determine $\csc(\frac{-17\pi}{4})$. Please give the exact value, not a decimal approximation.



$$\csc\left(\frac{-17\pi}{4}\right) = \frac{r}{y} = \frac{\sqrt{2}}{-1} = \boxed{-\sqrt{2}}$$

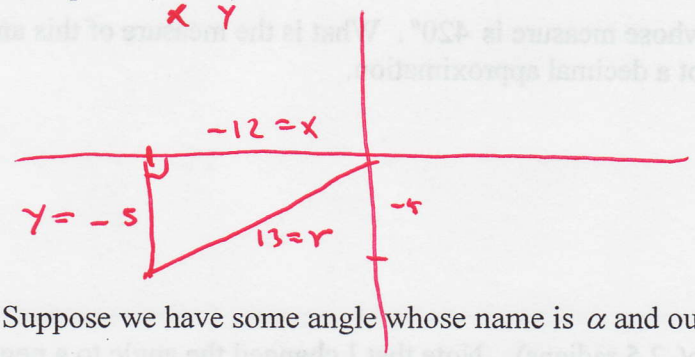
-30°

7. Determine the exact value of $\tan(\frac{-\pi}{6})$. Please give the exact value, not a decimal approximation.



$\tan(-30) = \frac{-1}{\sqrt{3}} = \frac{-\sqrt{3}}{3}$

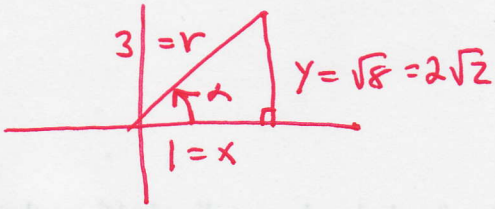
8. Consider an angle θ in standard position. Suppose the terminal side of the angle passes through the point (-12,-5). Find the exact value of the secant of this angle.



$\sec\theta = \frac{r}{x} = -\frac{13}{12}$

9. Suppose we have some angle whose name is α and our good friend α is in standard position and α's terminal side is in the first quadrant. Suppose further that we know that $\cos(\alpha) = \frac{1}{3}$.

Use your trigonometric talents to their fullest to determine $\sin(\alpha)$.

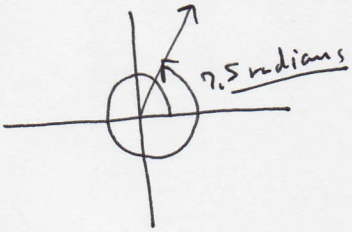


$\sin(\alpha) = \frac{y}{r} = \frac{2\sqrt{2}}{3}$

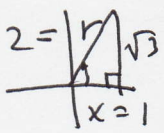
$\frac{\sqrt{8}}{3}$ is ok, full credi

10. Draw an angle of 7.5 radians in standard position.

$2\pi = (3.14)2 = 6.28$ radians.



11. Suppose θ is a positive angle, and suppose it is the smallest possible positive angle which can be such that $\sec(\theta)=2$ What is the measure of θ?



$\sec\theta = 2 = \frac{2}{1} = \frac{r}{x}$, $\theta = 60° = \frac{\pi}{3}$

Bonus 1. Explain why the phrase "suppose it is the smallest possible" need to be included in the instructions on problem 11:

420, or other multiple of 360 added to 60° will work.