Name: $Mr \cdot key$ Pre-Calculus 12 Date: $Feb \cdot 5/2015$ Chapter 4– Trigonometry & the Unit Circle 4.1 - 4.3 Quiz #1

Multiple Choice: Identify the choice that best completes the statement or answers the question.

1. What is the measure of the reference angle for an angle of -546° in standard position?

- **2.** Which of these angles is NOT conterminal with an angle of 190° in standard position?
 - **A.** −530° **B.** −170° **C.** 550° **D** 370°
- **3.** Given $\tan \theta = \frac{6}{11}$, which statement is true for all possible values of θ ?
 - (A) $\cot \theta = \frac{11}{6}$ B. $\cot \theta = -\frac{11}{6}$ C. $\cot \theta = -\frac{6}{11}$ D. $\cot \theta$ cannot be determined

4. What is the length of the arc that subtends a central angle of -210° in the unit circle?

C 5. What is –490° in radians?

A.
$$-490\pi$$
 radiansC. $-\frac{49}{18}\pi$ radiansB. $-\frac{49}{18}$ radiansD. $\frac{-88\ 200}{\pi}$ radians

C 6. What is the value of $\csc\left(-\frac{6\pi}{5}\right)$ to the nearest hundredth?

 $\operatorname{Csc}\left(-\frac{6\pi}{5}\right) = \frac{1}{\operatorname{sin}\left(-\frac{6\pi}{5}\right)}$ $= \frac{1}{\operatorname{sin}\left(-\frac{6\pi}{5}\right)}$

<u>C</u>

7. Identify the point on the unit circle corresponding to an angle of 300° in standard position.
A.
$$(-\sqrt{3}, -\frac{\sqrt{3}}{2})$$
 $(\frac{1}{2}, -\frac{\sqrt{3}}{2})$

B.
$$(-\frac{\sqrt{3}}{2}, \frac{1}{2})$$

 $(-\frac{\sqrt{3}}{2}, \frac{1}{2})$
D. $(\frac{1}{2}, -\sqrt{3})$

8. Which point on the unit circle corresponds to $\tan \theta = \sqrt{3}$? A. $(-\frac{1}{2},\sqrt{3})$ B. $(-\frac{\sqrt{3}}{2},-\frac{1}{2})$ C. $(\sqrt{3},-\frac{\sqrt{3}}{2})$ ($-\frac{1}{2},-\frac{\sqrt{3}}{2})$

9. Find the length of the arc that subtends a sector angle 225° in a circle with radius 3.7 cm. $\Theta = 225^{\circ}$ $\Gamma = 3.7 \text{ Cm}$ $a = \Theta \cdot \Gamma$ $= \left(225^{\circ} \times \frac{10}{180}\right) \cdot 3.7 = 14.53 \text{ Cm}$

10. P(-4, -3) is a terminal point of angle θ in standard position. Determine all possible measures of θ in the domain $-780^{\circ} \le \theta \le -60^{\circ}$. Give the answers to the nearest degree.



11. If θ is on a terminal arm, find the measure(s) of angle θ if $\sin \theta = -\frac{1}{\sqrt{5}}$. Find $\theta_{R} = \theta_{R} = \sin^{-1}\left(\frac{1}{\sqrt{5}}\right) = 26.56^{\circ}$ $= 27^{\circ}$ $\therefore \theta_{1} = 180 + 27 = 207^{\circ}$ $\theta_{2} = 360 - 27 = 333^{\circ}$ 2 angles

Bonus: A unicycle wheel has diameter 20 in. Suppose a positive angle of rotation corresponds to the wheel moving forward. Determine the distance and the direction the wheel will roll when it turns through an angle of -350° . Express the exact distance, in inches, in terms of π .

$$d=20$$

$$\Gamma = \frac{20}{2} = 10 \text{ in}$$

$$d=0.r$$

$$= \left(350^{\circ} \times \frac{TL}{180}\right). \quad 10 = \left[19.44 \ TL\right]$$

$$= \left(61.08 \ \text{in}\right]$$

$$\left[back \text{ ward}\right] \text{ "}$$