Quiz #6   *Key*   Math 1060   October 23, 2013
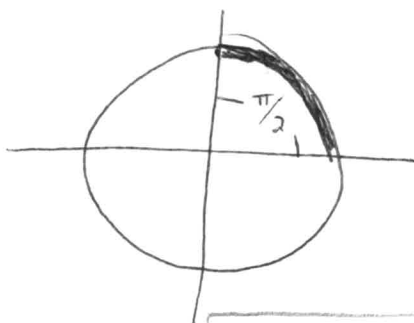
Name: _____   Section: _____

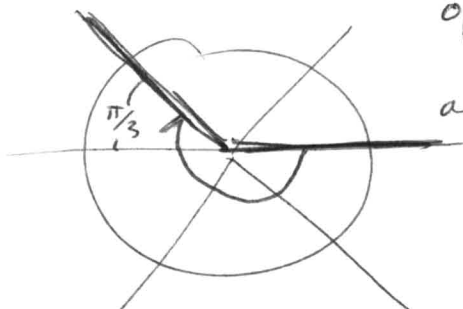You have 12 minutes to complete the quiz. Please **show all work**, and then **write your answer on the line provided.**

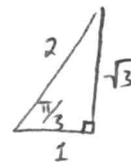1. Suppose you eat 1/4 of a 6" radius pizza. What is the length of crust that you have eaten?

$$\text{arc length} = (\text{angle})(\text{radius})$$
$$\uparrow$$
$$\text{in radians}$$

1pt for ↯/fmla
1pt for answer

$$= \frac{\pi}{2} \cdot 6$$

$$= 3\pi \text{ inches}$$

2. Let $\theta = \dfrac{-4\pi}{3}$. Find the reference angle, then find $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

$$opp = \sin(\text{ref } \text{↯}) = \frac{\sqrt{3}}{2}$$
$$adj = \cos(\text{ref } \text{↯}) = \frac{1}{2}$$

Partial credit possible if graphed ↯

only 1 pt off if consistently confuse trig values of $\pi/3$ w/ those of $\pi/6$

1 pt each answer

Reference angle: $\dfrac{\pi}{3}$

y-coord **pos** $\Rightarrow$ $\sin\left(\frac{-4\pi}{3}\right) = \dfrac{\sqrt{3}/2}{}$

x-coord **neg** $\Rightarrow$ $\cos\left(\frac{-4\pi}{3}\right) = -\dfrac{1}{2}$

$\tan\left(\frac{-4\pi}{3}\right) = \dfrac{\sqrt{3}/2}{-1/2} = \boxed{-\sqrt{3}}$

CONTINUED ON BACK

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← positive

3. Suppose that $\cos(\theta) = \dfrac{1}{2}$. Find θ.

$\pi/3$

$5\pi/3$

cos is positive
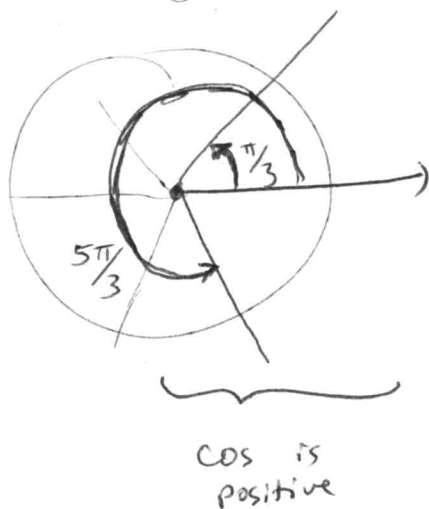
$$\cos\left(\text{ref }\theta\right) = \frac{1}{2}$$

$$\Rightarrow \quad \text{ref }\theta = \frac{\pi}{3}$$

all solutions

$$\theta = \frac{\pi}{3} + 2\pi \cdot n$$

or

$$\theta = \frac{5\pi}{3} + 2\pi n$$

for some integer n