Key

Quiz 5

1. [1] TRUE/FALSE: Circle T in each of the following cases if the statement is *always* true. Otherwise, circle F. Let x, y, and z be a real numbers.

   (T) F $(\sin x)^2 + (\cos x)^2 = 1$

   T (F) $\sin(u+v) = \sin(x) + \sin(y)$

   Show *all* your work algebraically for each and simplify. No credit is given without supporting work. There are *two* sides to this quiz.

2. [1] Find an angle that is coterminal with $\frac{31\pi}{15}$.

   (+1.5)

   $\frac{31\pi}{15} - 2\pi = \frac{31\pi}{15} - \frac{30\pi}{15} = \frac{\pi}{15}$

   (1.5)

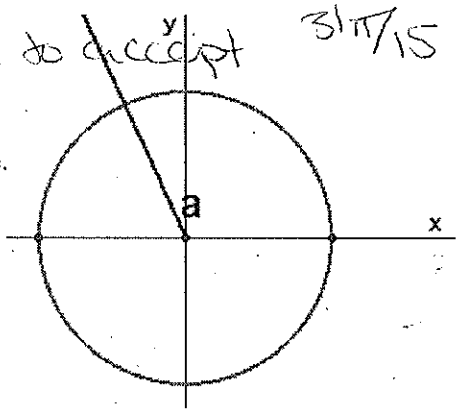
   note $\frac{31\pi}{15} \approx 372^\circ$

   $\frac{\pi}{15} \approx 12^\circ$

   Note: I will technically have to accept $31\pi/15$

3. [2] (WebHW12 #1) Consider the angle pictured here. The angle a is an integer when measured in radians. Give the radian measure of the angle.

   2



integer (+1)

eyeballed radians right (+1)

4. [3] (Cricles & Angles Wks) Find the point(s) on the unit circle whose first coordinate is $\frac{-2}{3}$.

$x^2 + y^2 = 1$ (x)

$(-2/3)^2 + y^2 = 1$ (+.5)

$y^2 = 1 - 4/9$ alg (+1)

$y^2 = 5/9$

$y = \pm\sqrt{5/9}$

signs (+.5)

so

$(-2/3, \frac{\sqrt{5}}{3})$ and $(-2/3, -\frac{\sqrt{5}}{3})$

5. [3] (§5.3 #24) If $\cos\theta = \frac{-2}{3}$ and θ is between π and 2π, find ~~cos~~ sin θ

$\cos^2\theta + \sin^2\theta = 1$ (+1)

$(-2/3)^2 + \sin^2\theta = 1$ (+.5)

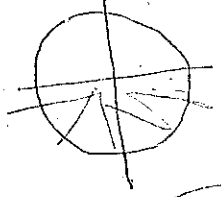
$\sin^2\theta = 1 - 4/9$

$\sin^2\theta = 5/9$

$\sin\theta = \pm\sqrt{\frac{5}{9}}$

$\sin\theta = -\frac{\sqrt{5}}{3}$

alg (+1)



signs (+.5)