Exam 1 Study Guide

Name_____

Answer the questions in the spaces provided. Feel free to use another piece of paper for your work

1. Draw the unit circle and:

   (a) Label the angles: $\{90°, \frac{2\pi}{3}, 150°, \frac{3\pi}{2}\}$

   (b) Label the following points: $\{\left(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right), \left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right), \left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)\}$

2. Give the supplementary angle for:

   (a) $\frac{3\pi}{5}$ $\frac{\pi}{8}$

3. Give the complementary angle for:

   (a) $\frac{\pi}{5}$ $\frac{3\pi}{8}$

4. Find the angle in radians provided:

   (a) $r = 10$, Area: 50π $r = 3$, Arc length: $\frac{6\pi}{5}$

5. Find the area:

   (a) $r = \frac{1}{2}$, Angle: 3π $r = 2$, Angle: $\frac{5\pi}{6}$

6. Find the arc length:

(a) $r = 5$, Angle: $\frac{\pi}{12}$ $r = 2$, Angle: $\frac{\pi}{3}$

7. What quadrant is the following angle in:

(a) 405° $\frac{3\pi}{2}$

8. Convert the angle from degrees to radians:

(a) 10° 175°

9. Convert the angle from radians to degrees:

(a) $\frac{2\pi}{5}$ $\frac{7\pi}{18}$

10. If $\sec(t) = \frac{2}{\sqrt{3}}$ find:

(a) $\cos(t)$ $\sin(t)$

11. Find the reference angle:

(a) $320°$ $\frac{5\pi}{3}$

12. A triangle has a hypotenuse of 13 and the length of the side opposite θ is 5 :

(a) Draw the triangle. Find $\tan(\theta)$.

13. Show $\cos^2(\theta) - \sin^2(\theta) = 2\cos^2(\theta) - 1$:

14. If $\cos(\theta) = \frac{3}{5}$ and $\sin(\theta) = \frac{4}{5}$:

    (a) Draw the triangle.

    Find $\cot(\theta)$.

15. Sketch $3\sin\left(\frac{x}{2}\right)$:

    (a) What is the amplitude?

    What is the period?

16. Sketch $3\csc(x)$:

17. Sketch $-\tan\left(\frac{x}{2}\right)$: