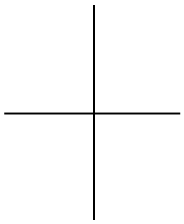
Name : _____ Block : ____

Chapter 4 (4.1 – 4.3)
Trigonometry and the Unit Circle Assignment

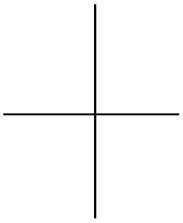
1. Draw each angle in standard position. State the quadrant that the terminal arm lies in and find the measure of 2 coterminal angles.

a) $215°$



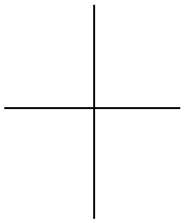
Coterminal: _____ _____

b) $-70°$



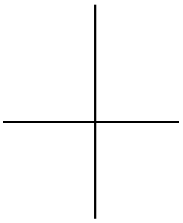
Coterminal :_____ _____

c) $\frac{4\pi}{5}$



Coterminal: _____ _____

d) 4.5



Coterminal :_____ _____

2. Change each radian measure into degrees. (Round to 2 decimal places).

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

b) 2.7

3. Change each degree measure into radians. (Exact values)

b) $310°$

b) $540°$

4. A radius of a circle is 7cm, and the length of an arc on the circle is 10cm. In **radians**, what is the central angle that subtends this arc length?

5. A circle has a radius of 15 and a central angle of $\frac{7\pi}{10}$. Find the arclength of the sector.

6. A circle as central angle of $35°$ and a radius of 7ft. Find the arclength of the sector.

7. The point $\left(-\frac{2}{3}, y\right)$ lies on the unit circle. Find the value of y if the point is in quadrant III.

8. Find all points on the unit circle that have an x-coordinate of $x = \frac{3}{7}$.

9. The point P(x,y) is located where the terminal arm of angle θ and the **unit circle** intersect. Determine the coordinates of point P if :

a) $\theta = 210°$ b) $\theta = \frac{3\pi}{4}$

10. The point P(x,y) is located on the terminal arm of angle θ. Determine possible coordinates of point P if :

b) $\theta = 270°$ b) $\theta = \frac{5\pi}{6}$

11. Identify a measure for θ in the interval $0 \le \theta \le 2\pi$ given the point. Answer must be in radians.

a) $(-1,0)$ b) $\left(-\frac{1}{\sqrt{2}},-\frac{1}{\sqrt{2}}\right)$

c) $\left(-\frac{\sqrt{3}}{2},\frac{1}{2}\right)$ d) $\left(1,-\sqrt{3}\right)$

12. The point (-4,7) is on the terminal arm of angle θ. Draw the angle and find all six trig ratios for the angle. (Use exact values)

13. Determine the exact value of each of the following. (Use special triangles to evaluate)

a) $\sin\frac{7\pi}{6}$

b) $\sec\frac{3\pi}{4}$

c) $\csc\frac{7\pi}{4}$

d) $\cot 60°$