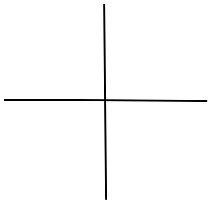
Name: ____________________

Assignment 4.1 – 4.3

1. Draw each angle in standard position. Find a **positive** and **negative coterminal angle**.

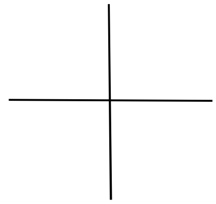
a) $215°$



Positive Coterminal: ______________

Negative Coterminal: ______________

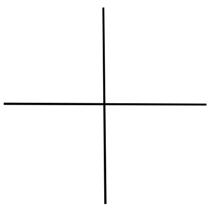
b) $-70°$



Positive Coterminal: ______________

Negative Coterminal: ______________

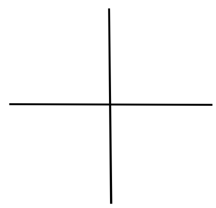
b) $\frac{4\pi}{5}$



Positive Coterminal: ______________

Negative Coterminal: ______________

d) 4.5



Positive Coterminal: ______________

Negative 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. (Express answers as exact values)

a) $310°$

b) $540°$

4. The 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 $15\ units$ 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 the coordinates of point P if :

a) $\theta = 270°$

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

11. Identify a measure for θ in the interval $0 \leq \theta < 2\pi$ given the point:

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. Express your answer as exact values (no decimals).

13. Determine the exact value of each of the following.

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

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

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

d) $\cot 60°$