Name:_____ Date:_____

HW Pre Calculus 12 Section 4.2 Unit Circles and Finding Coordinates of Point "P"

1. What is an Unit Circle and what does it mean to find a point on an unit circle?

2. If a point in an unit circle, what information can you derive from the "x" and "y" coordinates?

3. Suppose you are told that the point "P" with coordinates (1.875, -2.45) is on a terminal rotating around the origin. Is this point on an unit circle? How would you find out?

4. Suppose a point "P" on a terminal arm has rotated $\frac{5\pi}{3}$ radians. What are the coordinates of point "P" on the unit circle?

5. Suppose you are given the trig ratio $\sin\theta = 0.875$, which quadrant would the angle θ be in? Explain:

6. Suppose you are given the trig ratio $\cos\theta = -0.651$, which quadrant would the angle θ be in? Explain:

7. Suppose $\sin\theta = m$, $\cos\theta = n$, where both "m" and "n" are negative. Then which quadrant would angle θ be in? explain:

8. Why is the following trigonometric ratio true? Explain: $\tan\theta = \frac{\sin\theta}{\cos\theta}$. Is this true for all angles?

9. Suppose the point "P" is on a terminal arm that has rotated θ radians in standard position. Given that $\cos\theta = \frac{3}{\sqrt{11}}$, what are all the possible coordinates of point "P" on the unit circle. Provide your answer in exact form. Draw the angle θ in standard position.

10. Suppose the point "P" is on a terminal arm that has rotated θ radians in standard position. Given that $\sin\theta = \frac{-5}{3\sqrt{8}}$, what are all the possible coordinates of point "P" on the unit circle. Provide your answer in exact form. Draw the angle θ in standard position.

11. Suppose the point "P" is on a terminal arm that has rotated θ radians in standard position. Given that $\tan\theta = \frac{-7}{\sqrt{6}}$, what are all the possible coordinates of point "P" on the unit circle. Provide your answer in exact form. Draw the angle θ in standard position.

12. Suppose the point "P" is on a terminal arm that has rotated θ radians in standard position. Given that $\sin\theta = \frac{-4}{13}$, what are all the possible coordinates of point "P" on the unit circle. What are the ratios of $\cos\theta$ and $\tan\theta$ equal to? Provide your answers in exact form. Draw the angle θ in standard position.

13.