Lesson 7-4 Objective: Use the unit circle to find Sin, Cos, and Tan

A ***reference angle*** is the acute positive angle α (alpha) formed by the terminal ray of θ and the x-axis.

Discussion:

1.

What does $\sin\theta = 0.7328$ describe?

a) Find θ in degrees and radians.

b) Find θ_{ref} or α .

c) Find $\cos\theta$ using two different methods.

2. Graph the point (-3, 4) and find the reference angle and θ. What is $\cos\theta$ and $\sin\theta$ as a fraction and decimal?

3. If $\theta = \frac{4\pi}{3}$, then θ_{ref} or α is _____.

Express each of the following in terms of a reference angle.

1. $\sin 152^\circ$ 2. $\sin 310^\circ$ 3. $\cos 310^\circ$ 4. $\cos(-53^\circ)$

Use a calculator or table to find the values. Remember to use the mode to switch between radians and degrees.

5. $\sin 188^\circ$ 6. $\cos 4$ 7. $\sin(-32^\circ)$ 8. $\cos\left(\frac{2\pi}{5}\right)$

Find each value without using a calculator. Express answers as fractions and/or radicals as necessary. Don't look at the unit circle!!!!

9. $\sin(-45^\circ)$

10. $\cos(-45^\circ)$

11. $\sin\left(\frac{\pi}{3}\right)$

12. $\cos\left(-\frac{5\pi}{6}\right)$