Name: _____   Points: _____

1. Given $\cos\theta = \dfrac{1}{5}$ and $\sin\theta < 0$ find the value of the other ratios.

2. Given $\tan\theta = -\dfrac{7}{3}$ and $\cos\theta < 0$ find the value of the other ratios.

3. Tom wants to measure the height of a tree. He walks exactly 80 feet from the base of the tree and looks up. The angle from the ground to the top of the tree is 48º. How tall is the tree?
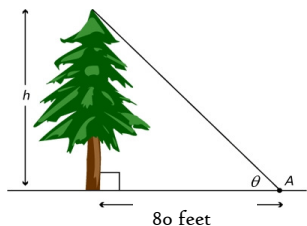
4. An airplane is flying at a height of 5 miles above the ground. The distance along the ground from the airplane to the airport is 8 miles. What is the angle of depression from the airplane to the airport?

5. Find the coordinates for all the angles in the unit circle:
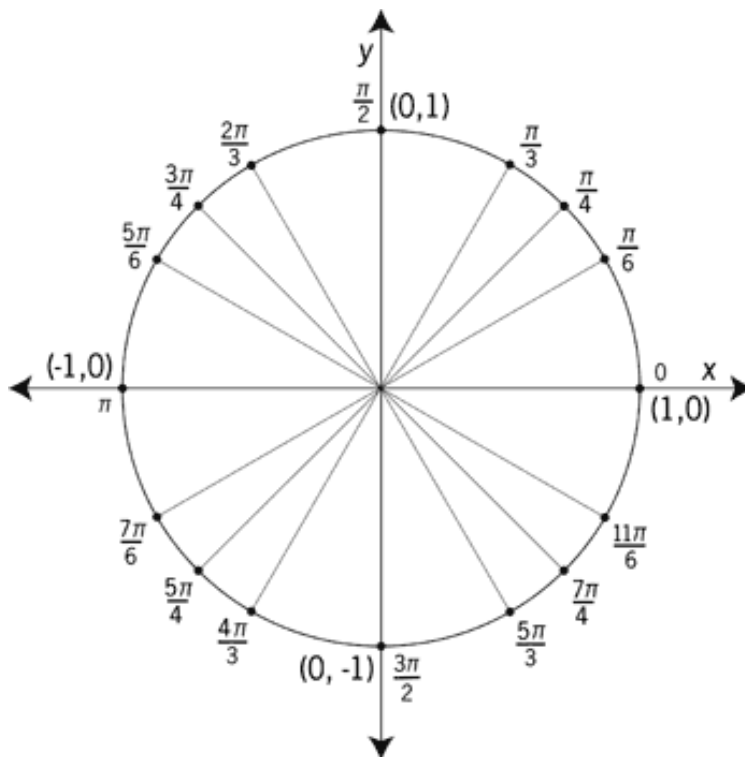
6. Find the reference angle associated with each rotation and then find the associated point (x, y) on the unit circle.

a. $\theta = \dfrac{13}{4}\pi$

b. $\theta = \dfrac{13}{6}\pi$

c. $\theta = -\dfrac{13}{3}\pi$

d. $\theta = \dfrac{7}{2}\pi$

The development of Trigonometry spans all cultures. The word is derived from combining two Greek words; *trigonon* which means "triangle" and *metron* "to measure." Around three millennia ago, the Babylonian number system of base sixty (sexagesimal) promoted the idea of 360 degrees in a circle, 60 minutes in a degree, and sixty seconds in a minute. This concept led to having sixty minutes in an hour.

Reference:
Willers, M. (2009). *Algebra: The x and y of everyday math.* New York, NY: Fall River Press.