***Materials:*** Compass, ruler, protractor, blue grid graph paper, and calculator

***Instructions:***

1. Draw a coordinate plane near the center of the graph paper. Count each axis by 0.1 of a unit. Using your compass draw a circle with center at the origin and a radius of 1 unit.
2. Label your positive *x*-intercept of the circle as *A0*.
3. With the protractor, draw a 20º angle with the positive *x*-axis as one ray. Make sure the second ray intersects the circle. This is called *A20*.
   1. Use your grid to estimate the ordered pair of the intersection.
   2. Use your calculator to find and .
4. With the protractor, draw a 40º angle with the positive *x*-axis as one ray. Make sure the second ray intersects the circle. This is called *A40*.
   1. Use your grid to estimate the ordered pair of the intersection.
   2. Use your calculator to find and .
5. With the protractor, draw a 115º angle with the positive *x*-axis as one ray. Make sure the second ray intersects the circle. This is called *A115*.
   1. Use your grid to estimate the ordered pair of the intersection.
   2. Use your calculator to find and .
6. What connection do you see between the *x*- and *y-*coordinates of the angle’s intersection with the circle, and ?
7. Use your hypothesis to estimate the values of and using only your circle.