# Activity 2: Circular Functions

By definition, the domain of both the sine and cosine functions is the set of angles in standard position. However, for many applications it is helpful to view these functions as having a domain that is the set of real numbers.

1. Using one radius of your circle as a unit, mark a number line on a piece of string.
2. Using your cardboard and pushpin model, position the string number line as shown.
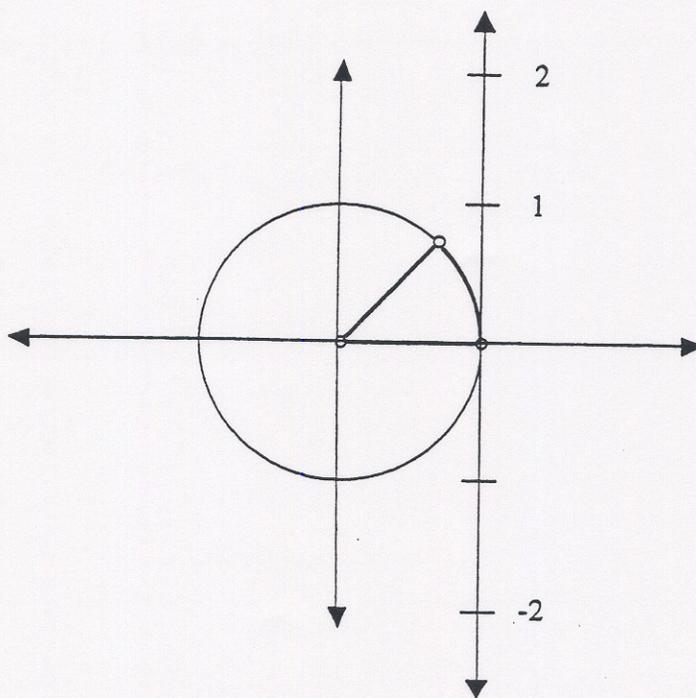
- Every real number r is associated with an arc of the circle.
- The arc is associated with a central angle, θ, that measures r radians.
- The arc terminates at the point (x, y) where $\sin \theta = y$ and $\cos \theta = x$.

We say: $\sin r = y$ The sine of the real number r is the sine of the angle, θ, that measures r radians.

          $\cos r = x$ The cosine of the real number x is the cosine of the angle, θ, that measures x radians.

Approximate the following:

3. sin 1   4. cos 3   5. tan 2   6. sin 8

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