While we can find the Trig. ratios for many angles using the 30°, 60°, 90° and 45°, 45°, 90° triangles from Geometry, we need something else to help us find the Trig. ratios for the Quadrantal angles (angles whose terminal sides are on the x or y axis: 0°, 90°, 180°, 270°, and 360°.)

The Unit Circle is a circle whose center is at the origin (0, 0) and has a radius of one. This circle intersects the x and y axis at four points: (1,0), (0,1), (-1,0), (0,-1).
Ex 1) Find all six Trig. ratios for $270^\circ$.

For our $270^\circ$ angle, our $(x, y)$ coordinates are $(0, -1)$ and our radius is 1.
\[
\sin 270^\circ = \frac{y}{r} = -\frac{1}{1} = -1
\]
\[
\cos 270^\circ = \frac{x}{r} = \frac{0}{1} = 0
\]
\[
\tan 270^\circ = \frac{y}{x} = -\frac{1}{0} = \text{undefined}
\]
\[
\csc 270^\circ = \frac{r}{y} = \frac{1}{-1} = -1
\]
\[
\sec 270^\circ = \frac{r}{x} = \frac{1}{0} = \text{undefined}
\]
\[
\cot 270^\circ = \frac{x}{y} = \frac{0}{-1} = 0
\]