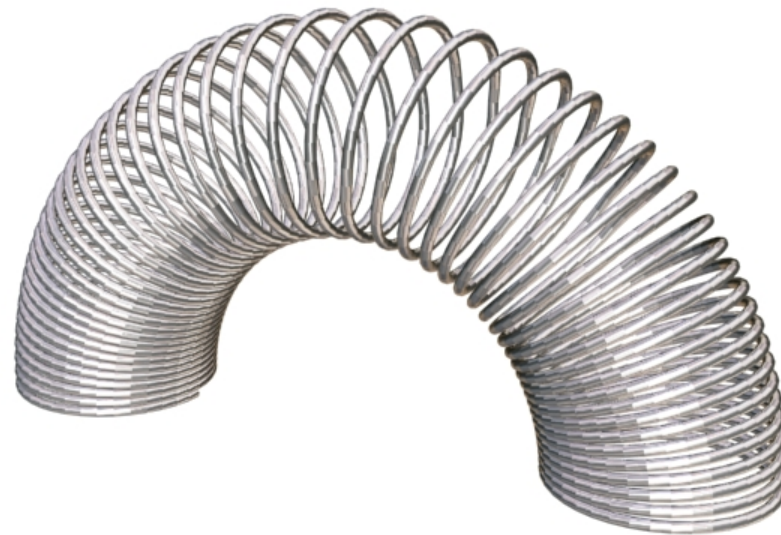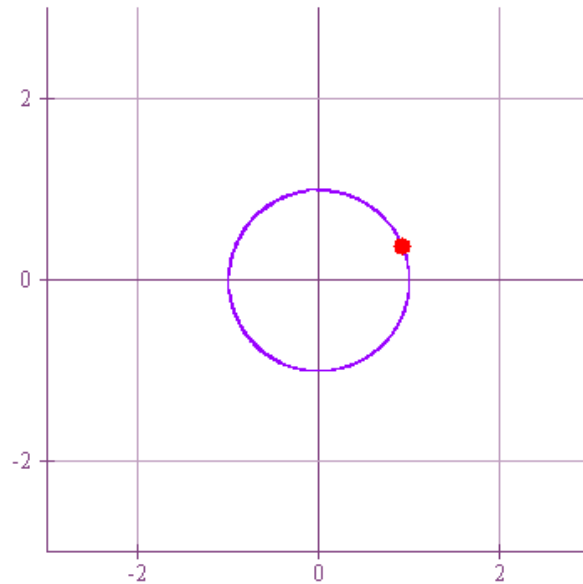# CIRCLES AND SLINKYS

We all know an equation for a circle of radius r and center at the origin.
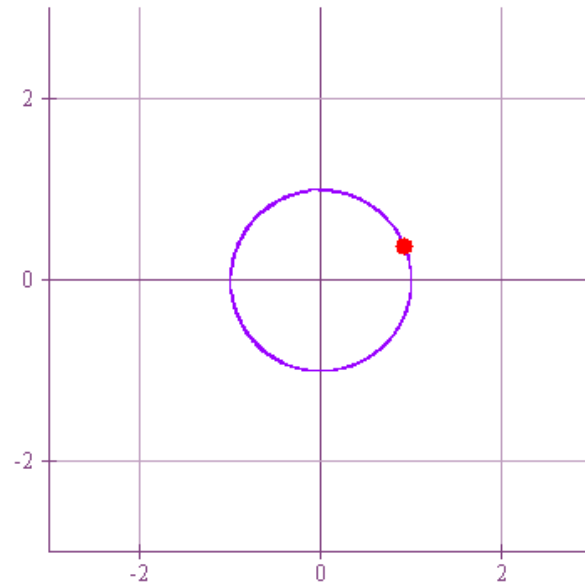
$$x^2 + y^2 = r^2$$

We also know various trigonometric relations.
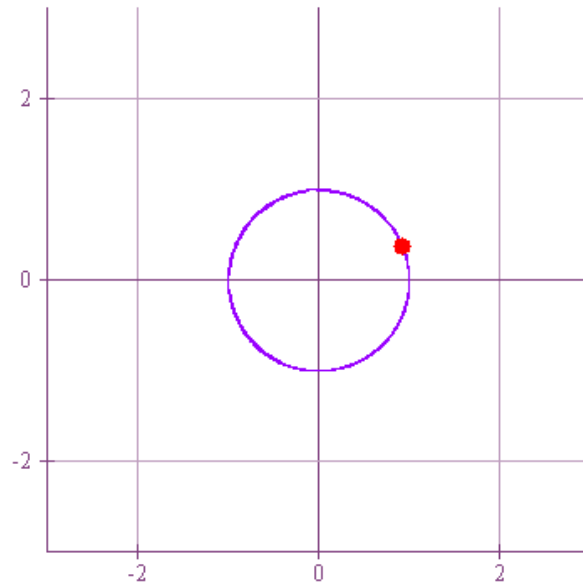
$$x = r\cos\theta$$

$$y = r\sin\theta$$

These trigonometric relations also define our parametric equations for the circle.
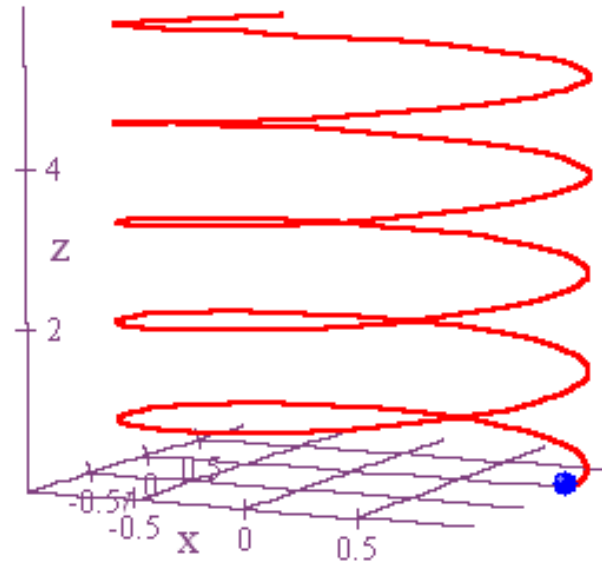
$$x = r\cos t$$

$$y = r\sin t$$

$$0 \le t \le 2\pi$$

And if we add a *z* coordinate, we get a slinky called a helix.

$$x = r\cos t$$

$$y = r\sin t$$

$$z = \frac{t}{5}$$

$$0 \le t \le 30$$

And that's how it's done!

$$x = r\cos t$$

$$y = r\sin t$$

$$z = \frac{t}{5}$$

$$0 \le t \le 30$$