06.4 - Arch Spiral

Starting with the code provided in `arch_spiral_login.py`, add turtle commands into the `main` function in the program to draw the Archimedian spiral shown below. In Cartesian coordinates, the spiral's path is given by

$$x = \frac{\theta}{\pi^2}\cos(\theta)$$

and

$$y = \frac{\theta}{\pi^2}\sin(\theta)$$

where θ increases from $0°$. Note that in these equations, θ is in degrees, but that the `sin` and `cos` functions in Python expect their argument to be in radians. You can convert from degrees to radians using

$$\theta_{\text{radians}} = \theta_{\text{degrees}} * \frac{\pi}{180},$$

or by using the `radians` function from the standard library's `math` module. Save your program as `arch_spiral_login.py`, where `login` is your Purdue login. Then submit it along with a screenshot showing your drawing.

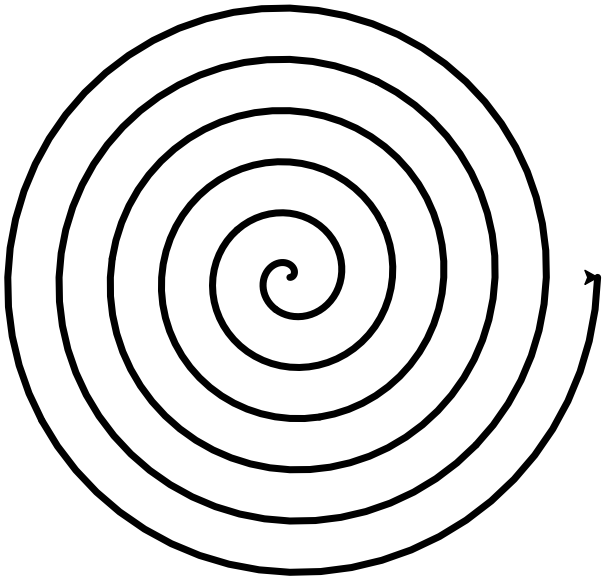

Figure 1: Archimedean spiral pattern for Exercise 06.4.