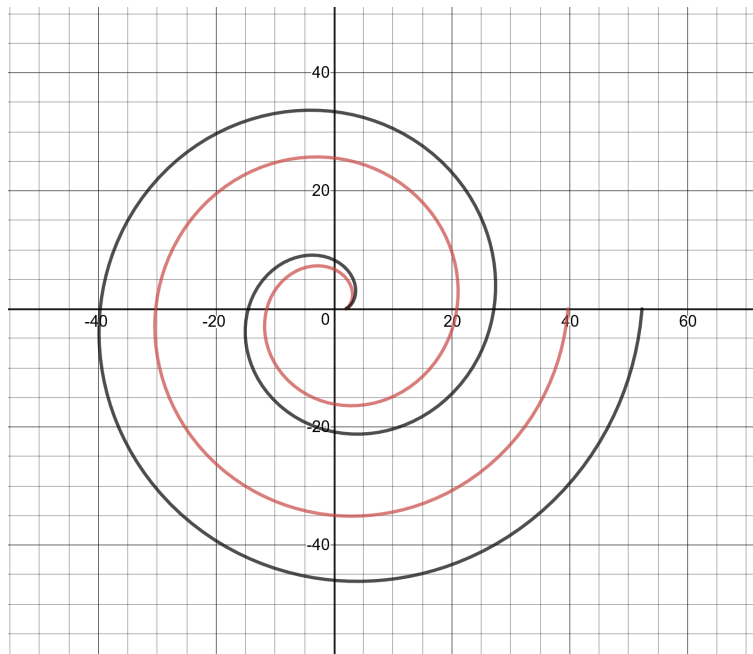


Friday Week 2
Calculus III



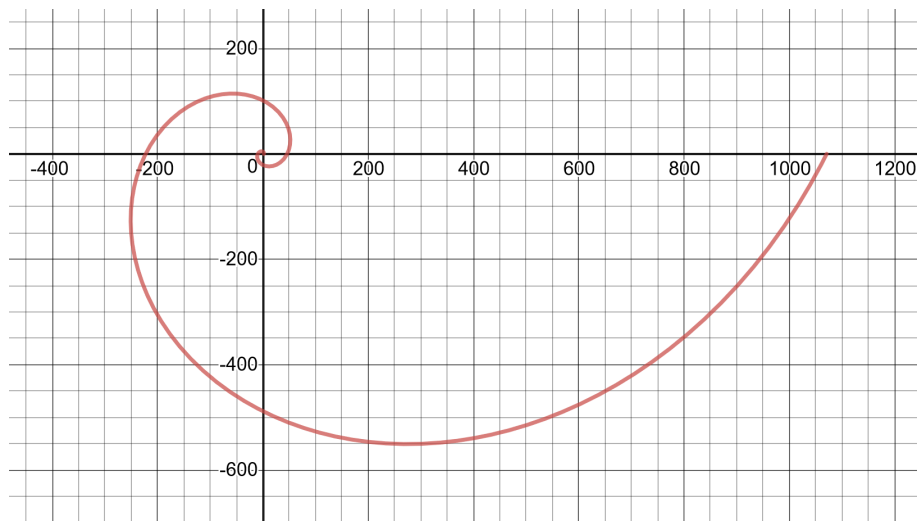
Above is a graph of two Archimedean spirals

$$r = 2 + 4\theta$$

$$r = 2 + 3\theta$$

$$\theta \in [0, 4\pi]$$

Find the area of the region between the two spirals on $[0, 2\pi]$. Shade this area on the graph.



Above is a graph of the logarithmic spiral $r = 2e^{\theta/2}$ on $[0, 4\pi]$. Find the arc length of this spiral on $[0, 2\pi]$.