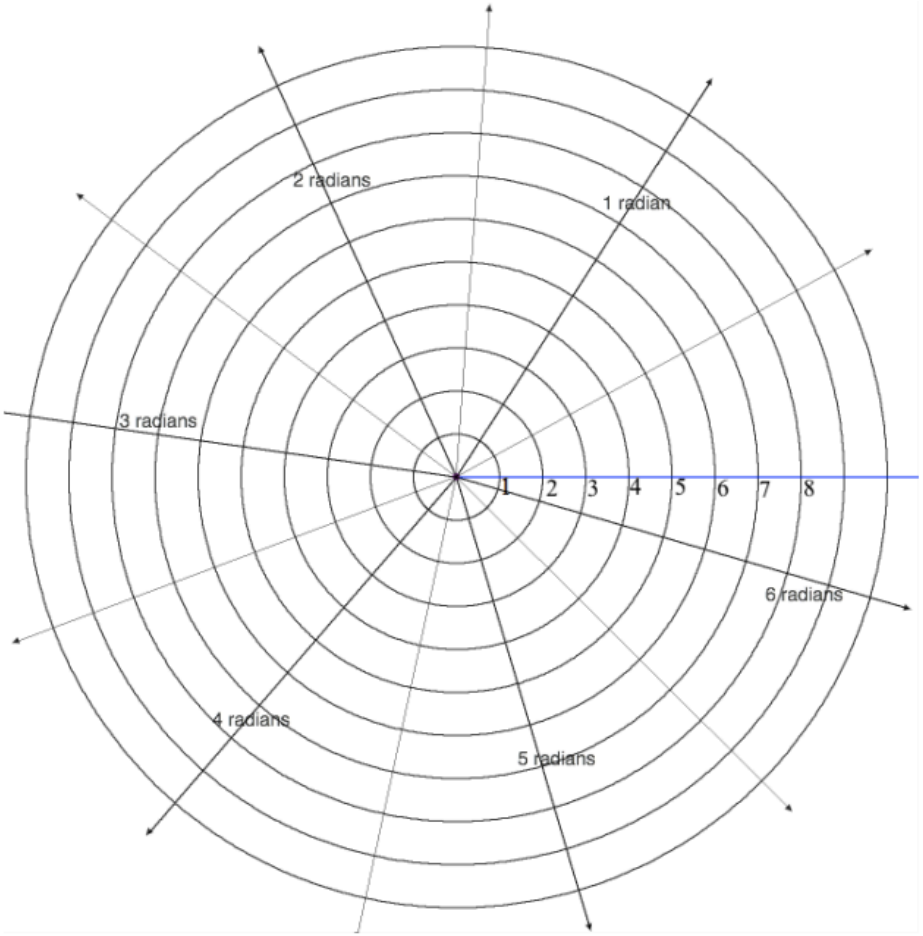
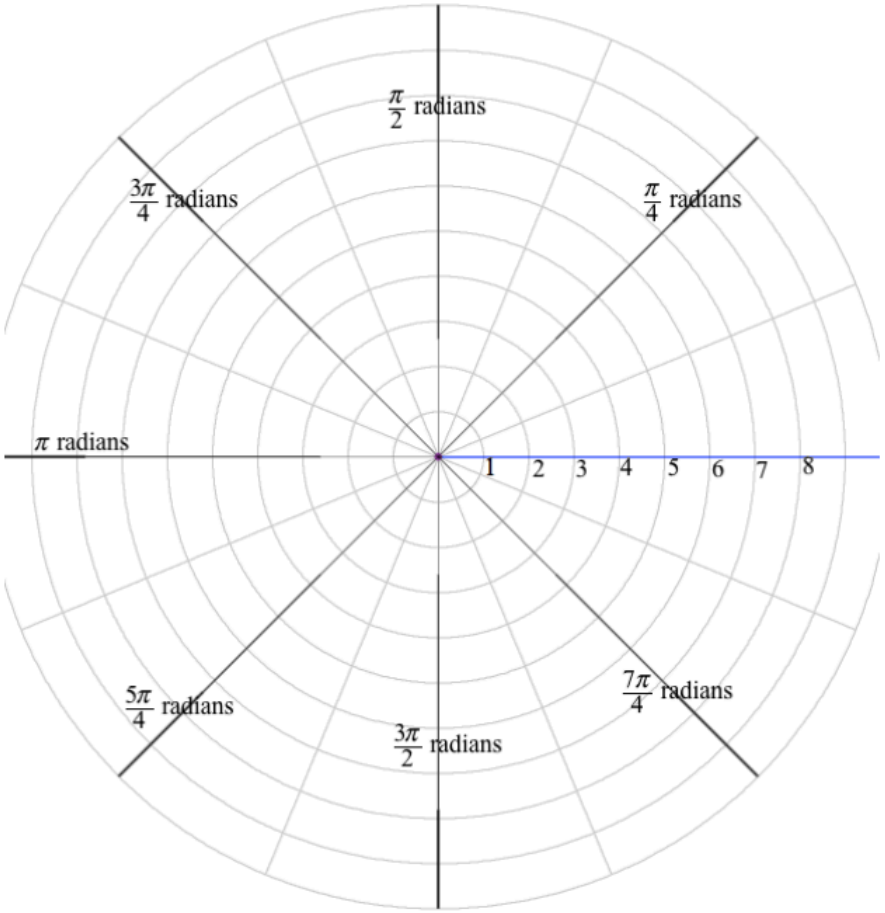
# Exercise 3.9.5: Graphing in Polar Drawing Handout

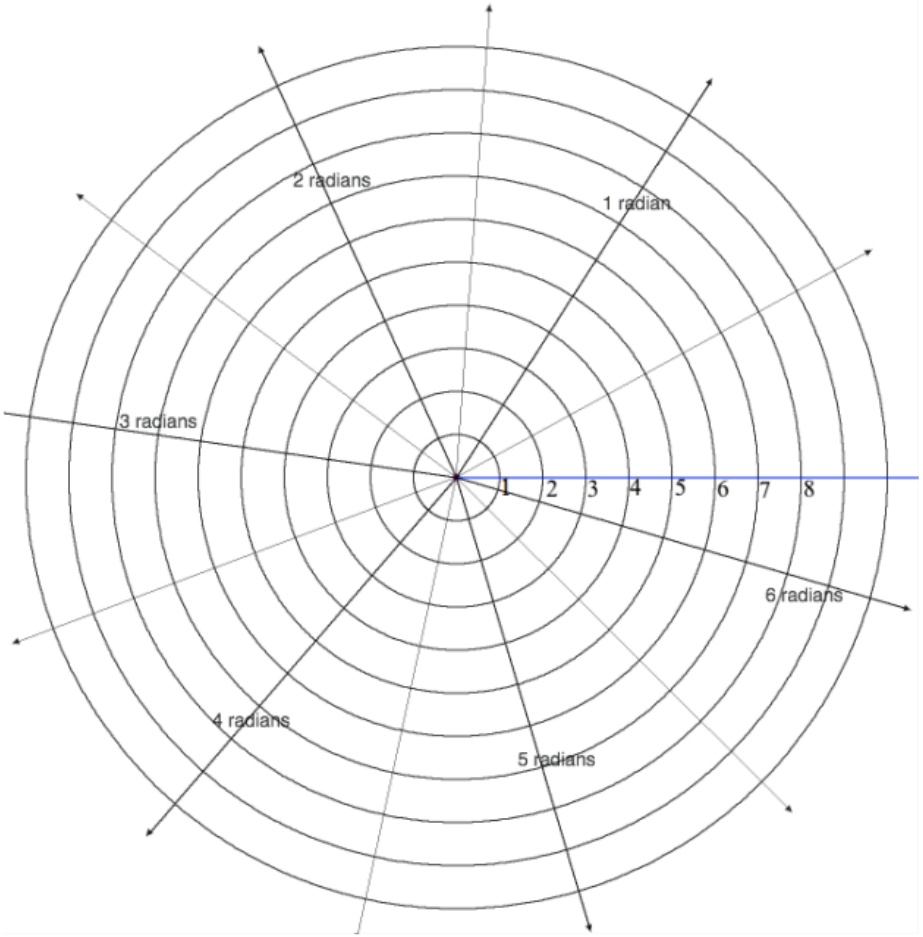
**For parts a) through d), graph each equation on *both* coordinate planes. Try not to plot points, but rather draw the graph smoothly while mentally estimating values of variables. Check your sketched graph with GC (type "theta" to get "θ"), and set the given domains for r and θ in GC. When you are done, scan**

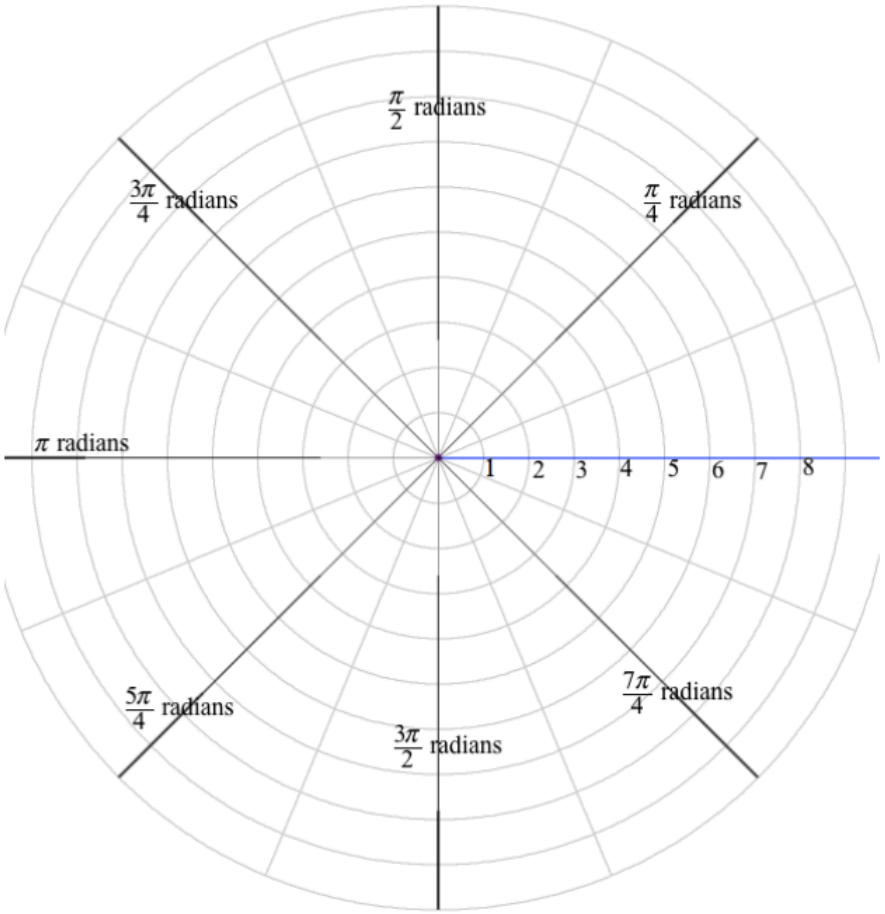
I. Any graph of the form $r = m \cdot \theta$ (where $m$ is a non-zero real number) is called an Archimedean spiral. Graph the following Archimedian spiral on *both* the left and right coordinate planes: $r = 0.1 \cdot \theta, 0 \le \theta < 10\pi$



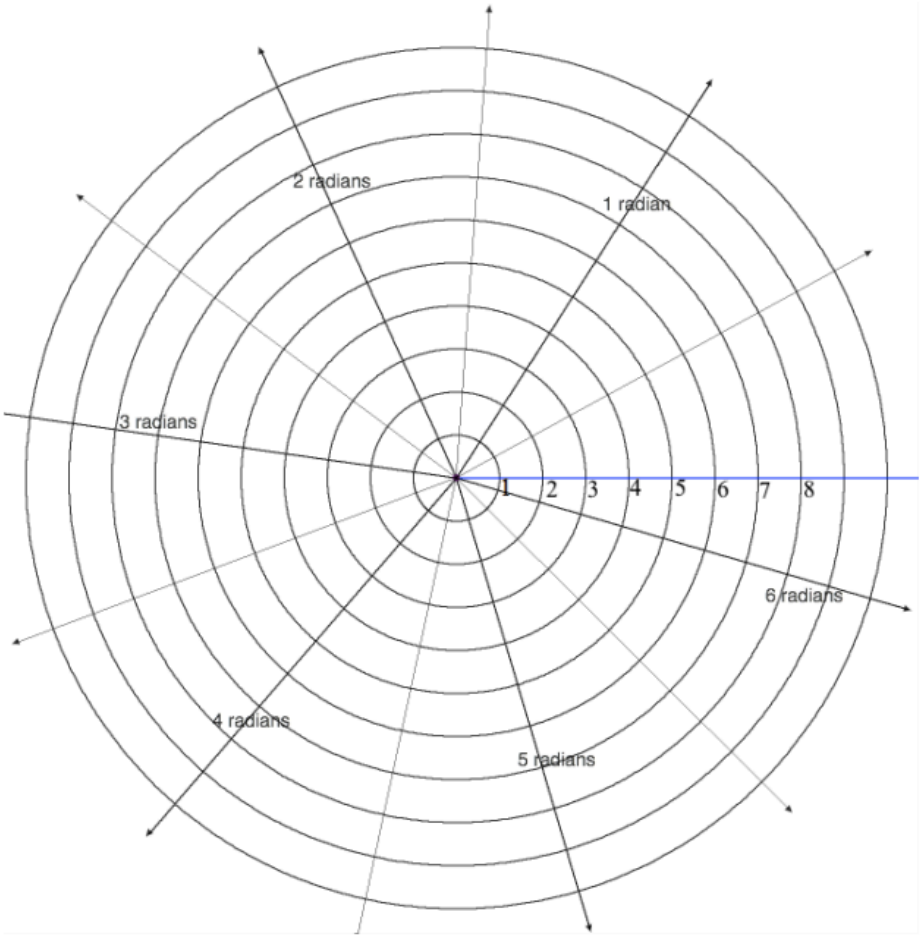



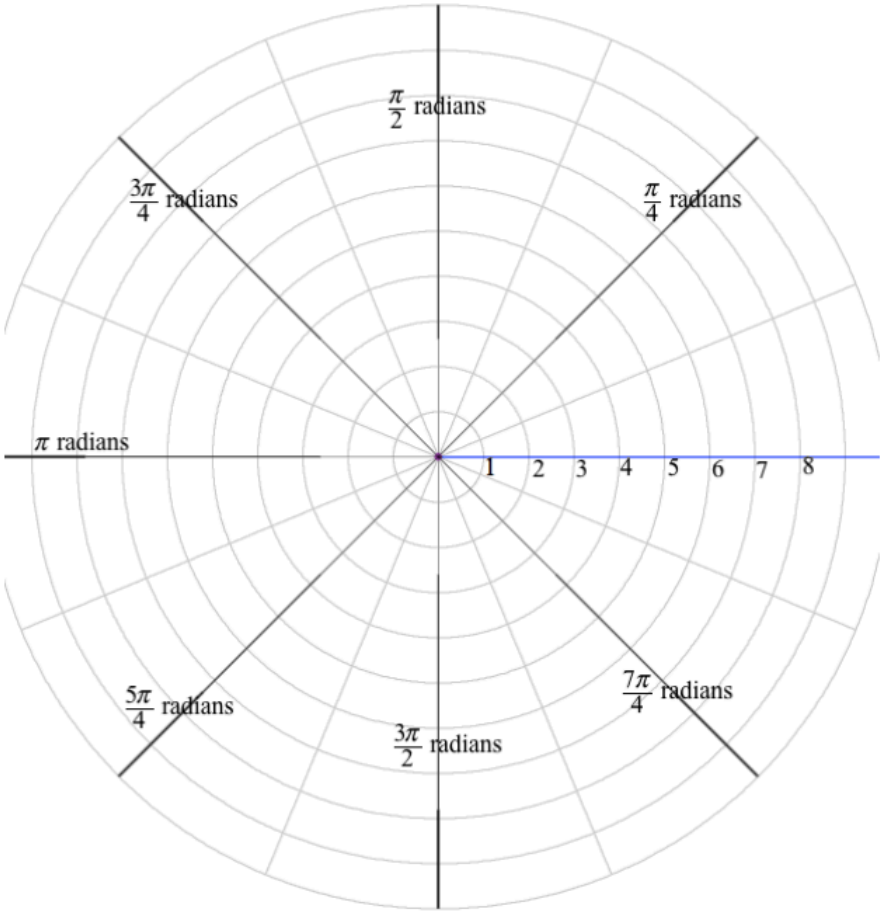
II. Graph the following on both the left and right coordinate planes: $r = 5 - \theta, 0 \le \theta < 2\pi$



III. Graph the following on both the left and right coordinate planes: $r = \sin(\theta), 0 \le \theta < 2\pi$



IV. Graph the following on both the left and right coordinate planes: $\theta = \sin(r), -8 \le r \le 8$