Garden of Graphs Project

Your assignment is to create a *Garden of Graphs* (or other picture) using polar graphs.

What you'll turn in:

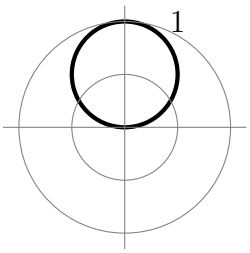
- **One page** with an illustration on it. That illustration must include at least 15 polar graphs. This "page" can be as large as you like.
- One or more pages with the equations and domains of the polar graphs included in your illustration.

Details of the assignment:

The graphs in your picture can be printed from `desmos.com` or another graphing website or software, or can be hand-drawn **neatly** and **accurately**. The graphs must include the polar axes $\theta = 0$ and $\theta = \frac{\pi}{2}$, as well as enough radial circles to make the size of your graph clear. The axes and radial circles can be drawn or printed lightly in gray so as not to interfere with your picture.

The graphs can be drawn or printed directly onto your illustration, or on separate paper and then cut out and arranged in your picture. You may include lines or other drawings in your illustration that are not polar graphs, but a minimum of 15 polar graphs must be included, as follows: 3 rose curves, 1 limaçon with inner loop, 2 cardioids, 2 lemniscates, 1 circle, 2 ellipses, 1 hyperbola, and 3 or more additional polar graphs of your choosing. If you need a reminder on how to create any of these graphs, see Section 10.8 in your textbook.

Each polar graph in your illustration should be numbered. On a separate sheet of paper, you will give the equations for each graph and a minimal domain needed to create the graph. For example, to include a circle in my picture I could make the following graph.



Then on my attached page I would include the equation and domain.

1. $r = 2\sin\theta$ for θ in $[0, \pi)$

Grading: This project is worth a total of **35 points**. You may work with a partner on the project if you choose to. This project will be graded on **accuracy**, **effort** and **creativity**. Your completed assignment is due on **Thursday, May 30** at the beginning of class, but may be turned in earlier. Late assignments will not be accepted.