MATH 203 **MAPLE Assignment 1** **Spring 2016**

DUE: Wednesday, April 20 at the beginning of class.

Use Maple to do all of the following. See examples in my lectures for Sections 10.3 and 10.4 on the course web site.

Use Text mode to enter your name and date at the top of your project.

A beautiful and awe–inspiring curve is expressed in polar coordinates by

$$r(\theta) \;=\; 150 \cdot \frac{4 - 2\sin 7\theta \;-\; \cos(30\theta)}{100 + \left(\theta - \frac{\pi}{2}\right)^8}\,. \tag{1}$$

In each case below, plot the curve $r(\theta)$ **in polar coordinates** using a `thickness` of 3 or 4 and a curve `color` of red or blue.

1. Plot the curve $r(\theta)$ on the interval $-\frac{\pi}{2} \le \theta \le 0$.
2. Plot the curve $r(\theta)$ on the interval $-\frac{\pi}{2} \le \theta \le \frac{\pi}{4}$.
3. Plot the curve $r(\theta)$ on the interval $-\frac{\pi}{2} \le \theta \le \frac{\pi}{2}$.
4. Plot the curve $r(\theta)$ on the interval $-\frac{\pi}{2} \le \theta \le \frac{3\pi}{4}$.
5. Plot the curve $r(\theta)$ on the interval $-\frac{\pi}{2} \le \theta \le \pi$.
6. Plot the curve $r(\theta)$ on the interval $-\frac{\pi}{2} \le \theta \le \frac{5\pi}{4}$.
7. Plot the curve $r(\theta)$ on the interval $-\frac{\pi}{2} \le \theta \le \frac{3\pi}{2}$.

Pretty cool, eh? (Get it? *Eh*?)

- Before printing, use the mouse to resize the plots so that two plots fit on each page.
- Staple all pages together in their proper order.