Fun with Parametric Equations
Due Wednesday, May 4, 2011

This goal of this project is very simple: You are to use parametric plots, polar plots, and any other fun functions you want to create a drawing in Maple.

For example, try the following in a Maple worksheet:

```
with(plots):
p1 := polarplot(5+sin(3*theta),theta = 0 .. 2*Pi,color = magenta,scaling = constrained)
p2 := plot([2*cos(t), -1+2*sin(t), t = 5*Pi/4 .. 7*Pi/4],color = red)
p3 := plot([-2+.8*cos(t), 2+.6*sin(t), t = 0 .. 2*Pi],color = blue)
p4 := plot([2+.8*cos(t), 2+.6*sin(t), t = 8*Pi/7 .. 13*Pi/7],color = blue)
display(p1,p2,p3,p4)
```

A couple of comments:

- You should make sure that at least one of your plots contains the option *scaling=constrained*. This will keep Maple from scaling your plots differently in the x and y directions.

- You should use *at least* 50 different functions in your final image, although you may well use many more.

- *The more creative you are with this, the better your grade will be.* For example, you would not earn a high grade for using just lines, circles and ellipses or only one color.

- For those of you who have had linear algebra, you know how to stretch, skew, and rotate via matrix multiplication. This gives you and easy way to manipulate any parametric plot.

  If you haven't had linear, ask me (or someone who has had linear) and we can explain it to you pretty quickly.

- The important dates to keep in mind:

April 8	Description of project due
April 20	Rough Draft of Maple Worksheet, including at least 10 functions
May 4	Final Copy of Maple Worksheet

  You will use onCourse to submit the description of your project and to upload the Maple worksheets.

- Finally, **Have a lot of fun with this!!!!**