27/04/2014

BIL108E Introduction to Scientific and Engineering Computing
Homework 2

Attention: Please be aware that the deadline for Homework2 is 06/03/14 until 11.00 pm. **Late submissions will not be accepted**. Do not submit "similar" papers, they will not be graded. The solution of each question must be submitted via Ninova in " *.m " file format (MATLAB file). Use .zip or .rar extension while uploading your homework.

Q1. Plot a circle in Matlab.

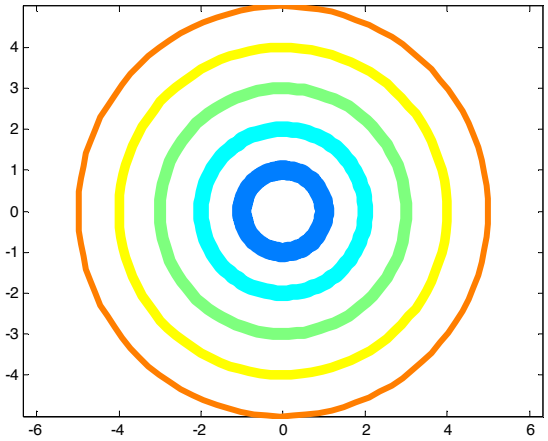
Hint: Write the function `[x,y]=getCircle(center,r)` to get the x and y coordinates of a circle. The circle should be centered at center (2-element vector containing the x and y values of the center) and have radius r. Return x and y such that plot(x,y) will plot the circle.

a) Recall that for a circle at the origin (0,0), the following is true:

$$x(t)=\cos(t),$$
$$y(t)=\sin(t) \text{ for } t \text{ on the range } [0,2\pi]$$

b) Write a script called `concentric.m`. In this script, open a new figure and plot five circles, all centered at the origin and with increasing radii. Set the line width for each circle to something thick (at least 2 points), and use different colors.

Hint: Other useful function calls are **hold on** and **axis equal**. It should look something like this



c) Make a script called `olympic.m`. This script should use your `getCircle` function to draw the Olympic logo, as shown below. Don't worry about making the circles overlap in the same way as the official logo. Use same Olympic color codes while plotting.