VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

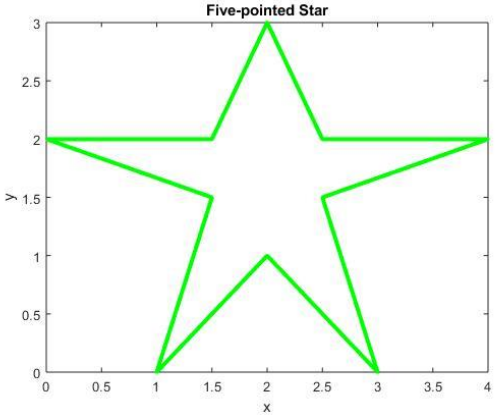
First Year College
NEF1104 Problem Solving for Engineers
Revision Sheet 1

1. Open the file: **Height Data.xlsx** from VUC→ Learning Space → Session1 → in-class.
   1) Use the spreadsheet to sort the data from the minimum to the maximum;
   2) Use the spreadsheet to calculate the 5 number summery and plot a relevant box/ whisker plot ;
   3) Use the spreadsheet to create a scatterer plot and the line that best fits the student height data and present the equation n the graph.

2. Write a Matlab program to draw a circle with radius of 5m.
   1) Generate Cartesian coordinates for the circle;
   2) Save data in ASCII text format;
   3) Load data from the text file to Matlab workspace;
   4) Plot the circle on labelled axes.
   5) Add the radius of circle to the figure title using the dynamic title.

3. Write a Matlab program to draw $Y = 3X^2/4$, where
   1) Generate Cartesian coordinates;
   2) Save the data in Excel spreadsheet;
   3) Load data from Excel spreadsheet to Matlab workspace;
   4) Plot the prabola on labelled axes.
   5) Add the title using the dynamic title.
   6) On the same graph, plot a second parabola with Y=3x^2. Update the legend.

4. In MATLAB, generate the following plot (green, line width = 3).



5. Import the Excel file **Height Data.xlsx** into MATLAB Workspace.
    1) Save all the imported data into a variable **data**.
    2) Define a variable **class1** to store the first 50 rows of data, **class2** to store the data in row 51-100, **class3** to store the data in row 101-140.
    3) On the same graph (figure 1), plot **class1** (red solid line) and **class2** (blue dashed line) data using the number of students as x-axis and heights as y-axis. Set up proper figure elements.
    4) On figure 2, bar plot **class3** data. Include the maximum and minimum height information in the title using dynamic title.