L15: class exercise

Try to implement/solve the following problems in MATLAB.

Plotting

1) Use the MATLAB **peaks()** function to generate X,Y and F meshes that have dimensions 40x40.

2) Plot the data as a surface (i.e. use **surf()**) with the colormap 'jet'. Add a colorbar with a color label. Use the **hold on** command and use **imagesc()** to plot the matrix image.

Question: What kind of plot does this make. Desribe the plot.

3) Add 10 to the function F and redo the steps in part 2).

Question: What does the image now look like?

Question: What is adding 10 to the function F actually doing to the plot?

Numerical Integration

Numerically integrate the following:

$$\int_0^3 \sqrt{y+1}dy$$

$$\int_{-1}^1 \frac{5r}{(4+r^2)^2}dr$$

$$\int_0^{\pi/6} \cos^{-3}(2\theta)\sin(2\theta)d\theta$$

$$\int_0^{\pi/2} e^{\sin(x)}\cos(x)dx$$

$$\int_0^{\sqrt{ln\pi}} 2xe^{x^2}\cos(e^{x^2})dx$$

$$\int_1^4 \frac{dy}{2\sqrt{y}(1+\sqrt{y})^2}$$