**Homework 1 – ME 360L**

1. Complete the code shown below to create a MATLAB function that computes the section properties for a rectangle. Compute the properties for a section that is 5 units wide and 3 units high. Write your answers on a piece of paper and turn them in along with the completed MATLAB function.

function [ Area, Ix, Iy, J ] = Sec\_Prop\_Rect (Width, Height )

%Sec\_Prop\_Rect

% This routine computes the second moments of inertia about the X and Y

% axes and the second polar moment of inertia through the centroid.

%

% Width The width of the rectangle

% Height The height of the rectangle

%

% Output

% Area The area of the section

% Ix The second moment of inertia around X

% Iy The second moment of inertia around Y

% J The polar moment of inertia

%

>>>Equations go here<<<

end

1. Complete the code shown below to create a MATLAB function that computes the section properties for a circle. Compute the properties for a section that is 5 units in diameter. Write your answers on a piece of paper and turn them in along with the completed MATLAB function.

function [ Area, I, J ] = Sec\_Prop\_Circle( Diameter )

% Sec\_Prop\_Circle

% This routine computes the section properties of a circle

%

% Input

% Diameter The diameter of the circle

%

% Output

% Area The area of the circle

% I The second moment of inertia

% J The polar second moment of inertia

%

>>>Equations go here<<<

End

1. Complete the code shown below to create a MATLAB function that computes the section properties for a hollow circle. Compute the properties for a section that has an outside diameter of 5 and an inside diameter of 4. Write your answers on a piece of paper and turn them in along with the completed MATLAB function.

function [ Area, I, J ] = Sec\_Prop\_HCircle( Dia\_Out, Dia\_In )

% Sec\_Prop\_Circle

% This routine computes the section properties of a hollow circle

%

% Input

% DiaOut Outside diameter of the circle

% Dia\_In Inside diameter of the circle

%

% Output

% Area The area of the circle

% I The second moment of inertia

% J The polar second moment of inertia

%

>>>Equations go here<<<

end