Sketching Exercises

In-Class Activity

Sketch the following shapes in the front plane in Solidworks. Create a new part file for each sketch. Keep in mind that all sketches should be completely defined and that relations should be used when possible. All dimensions are in inches.

1. Sketch a 3” by 4” rectangle. Place the origin at the lower left hand corner. (you don’t need to turn this in)
2. Sketch an equilateral triangle with a base length of 2.75”. Place the origin at the midpoint of the triangle base. (you don’t need to turn this in)

Homework Assignment (HW5)

Sketch the cross section of a W8x10 wide flange section (I-beam). Place the origin in the center of the cross section. Use the following dimensions for your sketch. (meet the requirements below and turn this in)

- Overall height of 7.89”
- Base width of 3.94”
- Flange thickness of 0.205”
- Web thickness of 0.17”
- All internal corners have a radius of 0.125”

I-Beam properties taken from: http://www.efunda.com/math/areas/RolledSteelBeamsW.cfm

Assignment Requirements (give proof of the following in your submission):

___ sketch of your I-beam that clearly shows all sketch relations and dimensions
___ expanded design tree showing fully defined I-beam sketch
___ part information in summary tab (w/author, lab section in description field, and assignment notes in comments field)
___ image of extruded I-beam to a 3 inch section
___ assign material properties (show material selected in the design tree)
___ annotate design tree (i.e. rename your I-beam sketch and extruded feature)
___ use SW to compute the mass, volume, center of mass, and moments of inertia
___ share two insights about Solidworks learned through this assignment
___ supporting evidence/discussion/significance for your two insights