

**Group Assignment**

Paint the wooden portion of your fish tank system that was fabricated in class 1. Have fun with your paint scheme. The way it looks is up to you. Make sure your fish tank is fully assembled and completely painted by the start of class meeting 3. Do not use spray paint inside any PSU Buildings, including the Engineering Building.

**Individual Assignment**

Use the Direct Solution Format for problems 1 through 3. Use the Engineering Solution Format for problems 4 and 5.

1. Make hand sketches and measurements of the following parts of the PVC tank.
  - End cap – a flat bottom is OK
  - PVC pipe with side holes
  - Barbed fittings – don't worry about the threads

Include enough dimensions that you can create accurate solid models of the parts. Include the hand sketches in the document you turn in for grading.

2. Using the hand sketches from problem 1 as a reference, create solid models of the individual parts listed in problem 1. Make image files of each part and include those images in the document you turn in for grading. Do not use a screen shot to create the images. Instead, use the "Save as" command in Solidworks to create a PNG or JPG file. (PNG is probably better, but use what works best for your word-processing software.)
3. Use the solid models of the parts from problem 2 to create an assembly of the fish tank. Include at least one image of the assembly in the document you turn in for grading.
4. Make a reasonable assumption for the depth of water in the PVC pipe and end-cap assembly that forms the reservoir of your fish tank. What volume of water is contained in the reservoir for the assumed depth. Report your result in both  $\text{cm}^3$  and mL.
5. How much salt (in grams) must be added to a two liter bottle of pure water to make the resulting mixture 0.035 percent salt by weight?