Problem 1:

The purpose of this problem was to test the student's knowledge on calculating the flow rate of a piping system. The problem required calculating flow rate of water in each pipe while neglecting minor losses. In this problem my biggest issue was getting my excel sheet to function correctly, which I was clearly unable to do.

Problem 2:

The purpose of this problem was to test the student's knowledge in the computing the depth of flow for open channels. Through the use of excel I was able to make educated guesses on the depth of the trench until I found the desired depth.

Problem 3:

The purpose of this problem was to test the student's knowledge on flow nozzles and manometer scale ranges. In this problem the I was required to determine the manometer scale range to be used. The problem required the manipulation of formulas along with iterations from excel to find the approximate manometer scale.

Problem 4:

The purpose of this problem was to test the student's knowledge on piping systems. The problem required me to calculate the required minimum thickness of the pipe to accommodate the design pressure of the system. This problem required the use of the pipe thickness formula and possibly some iterations for h. Using the given values with some of the formulas from the book I should've be able to solve the problem.

Problem 5:

The purpose of this problem was to test the student's knowledge on calculating the effect of water vanes on water streams. In this particular problem I had to solve for velocity and the vertical force without knowing the flow rate of the water. By manipulating the equation Fx=pQ(V2x-V1x), I was able to sub V2x=V1xcostheta into the equation and solve for v1. After finding V1 I simply had to sub it back into the equation to find the vertical force.