

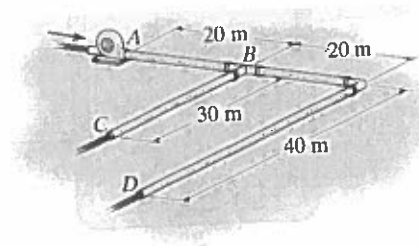
ESC301 Project

100 points

Name(s) _____

Problem 1

The horizontal galvanized iron pipe system is used for irrigation purposes and delivers water to two different outlets. If the pump delivers a flow of $0.015 \text{ m}^3/\text{s}$ in the pipe at A, write a MATLAB program to determine the discharge at each outlet, C and D. Neglect minor losses. Each pipe has a diameter of 30mm. Also what is the pressure at A?



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Problem 2

An automatic sprinkler system for a yard is made from $\frac{1}{2}$ inch diameter PVC for which the roughness is 5×10^{-6} ft. If the system has the dimensions shown, write a MATLAB program that determines the volumetric flow delivered to each sprinkler head C and D. The faucet at A delivers water at 70°F with 42 psi pressure. The system has two elbows and a tee that must be accounted for in your calculations. Finally the loss coefficient of the $\frac{1}{8}$ -in-diameter sprinkler nozzles at C and D is $K_L = 0.06$.

