CIVE 401 Homework Assignment 7
Due 15 April 2015 (Worth 30 points)

Write and execute a program in Excel to solve and turn in problems 2.42 and 2.43 in Chin (2013) but make the following alterations to the problems:

1. Solve both problems using the Darcy-Weisbach friction head loss equation with the Swamee-Jain equation for the friction factor;
2. In problem 2.42, place a wide open angle valve in the pipe to the right of the lower left inlet node and an half-open gate valve in the pipe up from the lower right inlet node.
3. In problem 2.43, assume that the elevation of all of the nodes is the same and:
   a. Make the material of pipes HC, FG, and DE to be steel and the material of the remainder of the pipes to be concrete (with steel forms);
   b. Assuming the gage pressure at pt C is 500 kPa, calculate the pressures at the demand nodes D through E;
   c. Without increasing the pressure at C or changing the layout (alignment) of the network, redesign the system to boost the pressures by about 50 kPa at all of the demand nodes.

Send a copy of your program by email both to tkg@engr.colostate.edu and to cdwallac@gmail.com by 9AM on 15 April. Provide a brief write-up and summary of your results in standard homework format in class (no formal report is needed).

As with all homework assignments, you are expected to perform and turn in your own work in the completion of this project. Make sure that you adhere to the “Policy on Homework” posted on the class website and that you sign and attach the Student Honor Pledge.