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MET 330

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Test 3 Reflection

Test 3 built upon previous concepts from Test 1 and 2 but added multiphase pipeline systems. The added bypass line that could throttled with a gate valve introduces calculations that require iteration to find the true flow rates through the different pipes. The system can be initially evaluated as a single line system because the 1" gate was closed. Opening the valve presents the need for solving for multiple flows and finding all potential losses in both bypass lines. The system would require more pump power from originally calculated once the system is exposed to multiple pathways to flow through.

The test instructed us to complete Part B with excel. However, the test solution did all of the setup work on paper, only completing the iteration through excel. I think if I would have started my solutions for Part B on paper and then moved to the excel portion, I would have done much better in solving the problem.

Iterations and developing the multiphase piping system equations is a time-consuming task. Therefore, to complete this test within the allotted time, I needed to begin Part B much sooner than expected.

		My Grade
1. Purpose	0.5/10.0	0.5/10.0
2. Drawings	1.0/10.0	1.0/10.0
3. Sources	1.0/10.0	1.0/10.0
4. Design considerations	1.0/10.0	1.0/10.0
5. Data and variables	0.5/10.0	0.5/10.0
6. Procedure	2.0/10.0	2.0/10.0
7. Calculations	2.0/10.0	2.0/10.0
8. Summary	0.5/10.0	0.5/10.0
9. Materials	0.5/10.0	0.5/10.0
10. Analysis	1.0/10.0	1.0/10.0
TOTAL	10.0/10.0	**10.0/10.0**

PART 1)

1. Initial setup – labeling, reference, points	1/5	1/5
2. Appropriate use of Bernoulli's to solve for hA	1/5	1/5
3. Compute all 11 energy losses	1/5	1/5
4. Compute pump power	1/5	1/5
5. Correct final results	1/5	.5/5

PART 2)

6. Setting up the equations	0/7	1/7
7. Consider ALL energy losses in each branch	.25/7	1/7
8. Setting up the iteration process	0/7	1/7
9. Solving the equations using excel	0/7	1/7
10. Tried all valve opening cases	0/7	1/7
11. Correct final results	0/7	1/7

FINAL GRADE:
10 + (90/2)*(5/5 + .5/7) **= 58**