Elson Edmonds II
MET 330
Dr. Ayala
12/11/24

Test 2 Reflection

1. The whole test was based off of work and theories that we practiced in the second test expect we included minor losses this time. Question one was based on minor losses from the last test. Question two was based on forces and required me to use strategies learned in statistics to solve the equations. Question three required no math and was centred around reading and understanding the sulzer charts.

2. After comparing my test 3 to the solutions posted on canvas, my work closely followed the professors' work when finding the new velocity and recalculating the minor losses for question one. For the redesign, our iteration process was derived by our Bernuolli's equation and did not look exactly like the solution. Although, our answers come out to be the same pipe and diameter and the same HP. For the second part, the forces acting on the discharge pipe were drawn correctly and Ry was calculated correctly, but Rx was a greater number than it should have been due to the unknown height of the inlet to the tank. Lastly, the pump selection was run correctly, but the pump chosen was based on our data, which was not identical to the professors. This yielded us a different pump but the procedure and information is correct for the pump we chose.

If I had to take this test again, I think that I would have reached out to you for some advice when I was not too sure on interpretation. I Normally do well with spacing and making time for tests, I just need to speak up when I don't know what is going on.

WRITING RUBRIC (APPLIES TO THE WHOLE TEST, NOT TO PARTICULAR PARTS)

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

I. Pipeline redesign Recalculate the new pump power including minor losses	1/8
Use Bernoulli's to get ha (ref & points in pict.)	
Include all minor losses	
Correct results	
II. Increase of pump power with new required flow rate	3/8
Recalculate velocity	
Included all minor losses?	
Correct results	
III. New pipe diameter with same original pump	3/8
Included all minor losses?	
Wrote full equation with diameter as unknown	
Iteration process	
Correct results	
2. Pipe-elbow forces	
Correct control volume and points	1/8
Free body diagram and correct forces	1/8
Force in x – solve for Rx (need to use Bernoulli's)	2/8
Force in y (weight) – solve for Ry	2/8
Correct results	0.5/8

3. Pump preselection

Why kinetic pumps? Why radial pumps?	0.5/6
Use a pump map?	1/6
Draw desired operating point in pump curves	1/6
Pump suction, discharge size, and impeller sizes	1/6
Pump power, efficiency, size, and weight	1/6
Correct results	0/6

(90/2)*(7/8) + (90/4)*(6.5/8 + 4.5/6) = 75%

4)

A. I Struggled with the interpretation of the problem, and to solve this I just sat and looked at the problem along with my notes and the textbook to get a better understanding of what you really wanted us to solve. I understand that the “sitting and staring” approach doesn't work for most, but for me it gets my brain moving and the wheels turning until I can put some pieces together.

B. I planned ahead of time, and gave myself plenty of time in order to complete it, because I know that although it was only three questions I knew that it was more than meets the eye.

C. I learned how to read a sulzer chart.

D. I think these concepts are useful when working in a field that involves waste disposal or even when designing sink installations in a building.

E. In my future as an engineer.

F. Yes these are real world problems that may occur in my field

G. I will use it at my future job, when asked to do a task that invokes these skills and knowledge that I've learned, and to the best of my ability.

H. No not in the current courses that I am enrolled in.

I. I was the most successful in the first question, I think that's where I spent most of my time.

J. I see this course giving me valuable knowledge that my future employers will value that I know already.

K. I spent 3 days on the test, about 20 hours. I spent the first day just looking and going over notes and the second day completing the problems and the third on the write ups and just making sure my answers are logical. I don't think I'd do anything differently other than get some more of my answers correct.