

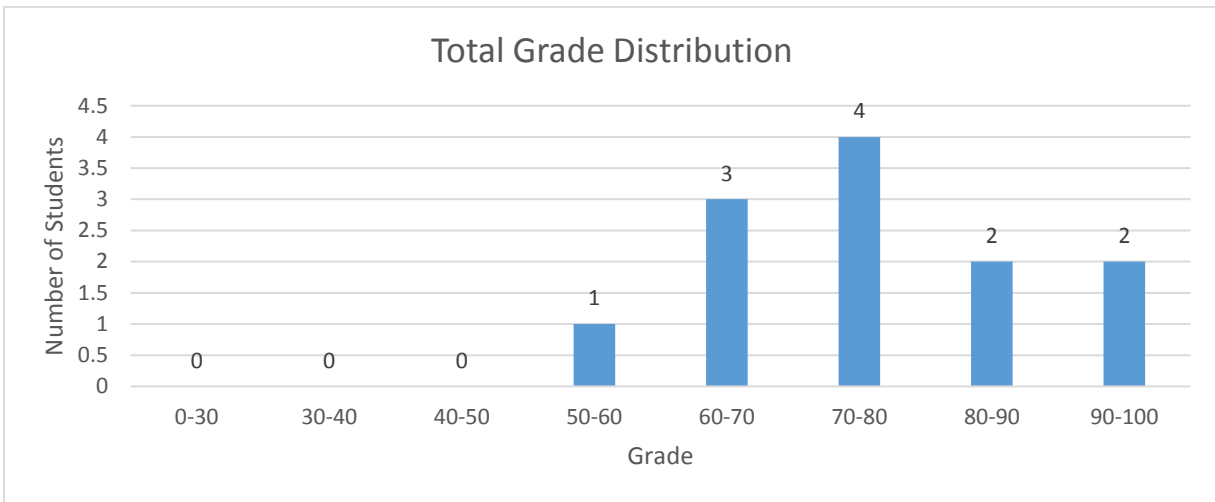
Exam 2 Report

11/8/2010

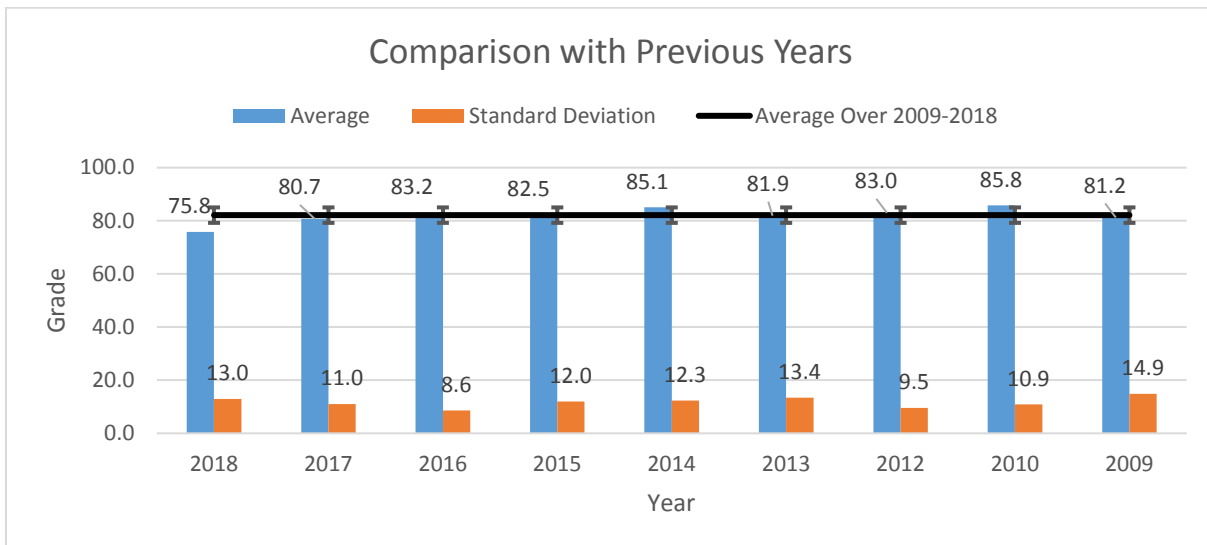
1. Summary

Total number of students	12
Attended	12
Missed	0
Number of problems	3
Average grade	75.8
Standard deviation of grades	13

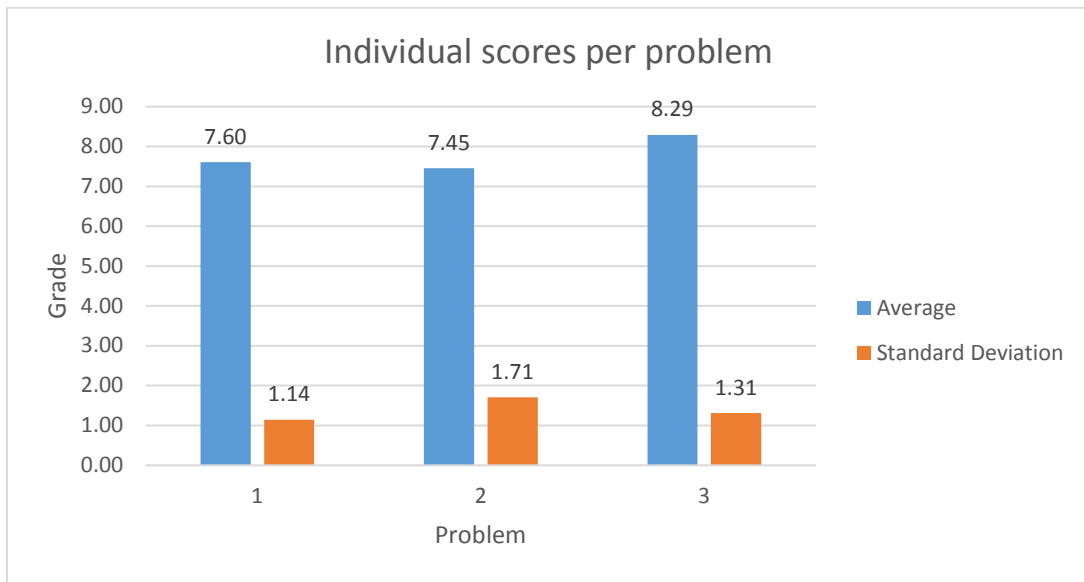
2. Grade distribution



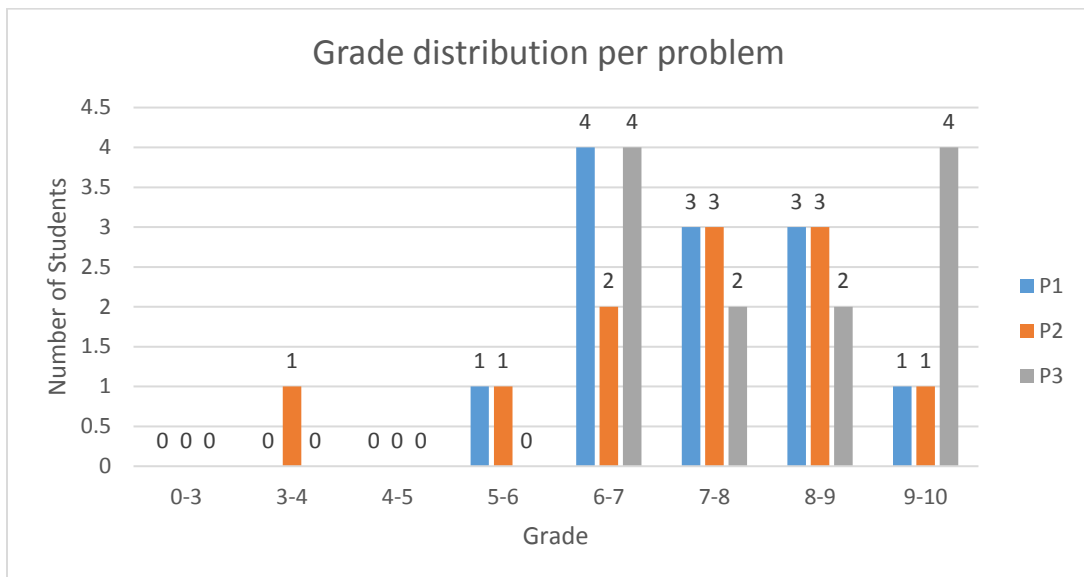
3. Comparison with past years



4. Individual problem breakdown



5. Grade distribution per problem



6. Comments

- Many students did not complete problems due to difficulty and/or time constraint

PROBLEM 1

- Some students did not neglect the inertial term
- Many students incorrectly neglected $\frac{v_r}{r^2}$ and/or $\frac{1}{r} \frac{\partial}{\partial r} \left(r \frac{\partial v_r}{\partial r} \right)$
- Most students had difficulty substituting $v_r = f(z)/r$ into simplified PDE and solving for v_r

PROBLEM 2

- Most students had difficulty applying the moment of momentum equation
- Many students neglected the y-moment of momentum component at section 3
- Many students neglected the pressure force
- Some student did not use energy equation to calculate pressure at section 2

PROBLEM 3

- Some students incorrectly assumed friction factor is the same for all pipes
- Some students incorrectly assumed the velocity is the same for all pipes
- Some students did not assume same loss for parallel pipes A and B (i.e. $(h_f)_A = (h_f)_B \rightarrow$
 $\left(f \frac{L}{d} \frac{V^2}{2g} \right)_A = \left(f \frac{L}{d} \frac{V^2}{2g} \right)_B$)