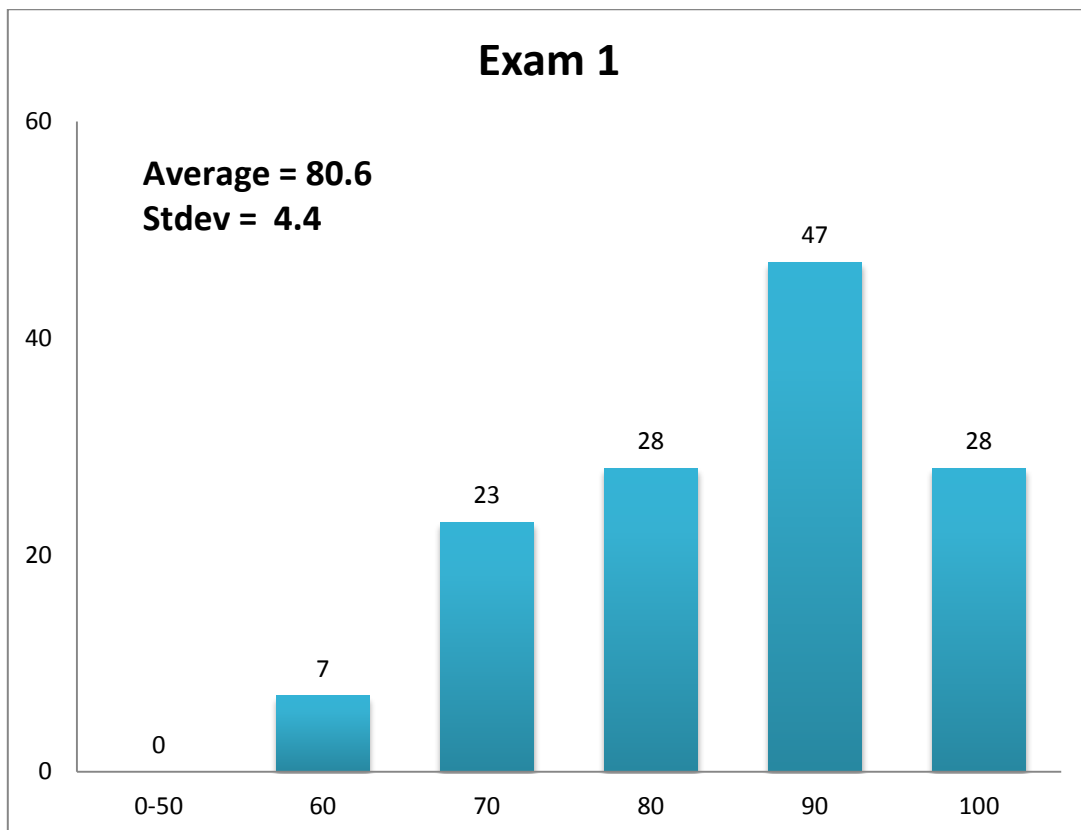


Report of Exam 1

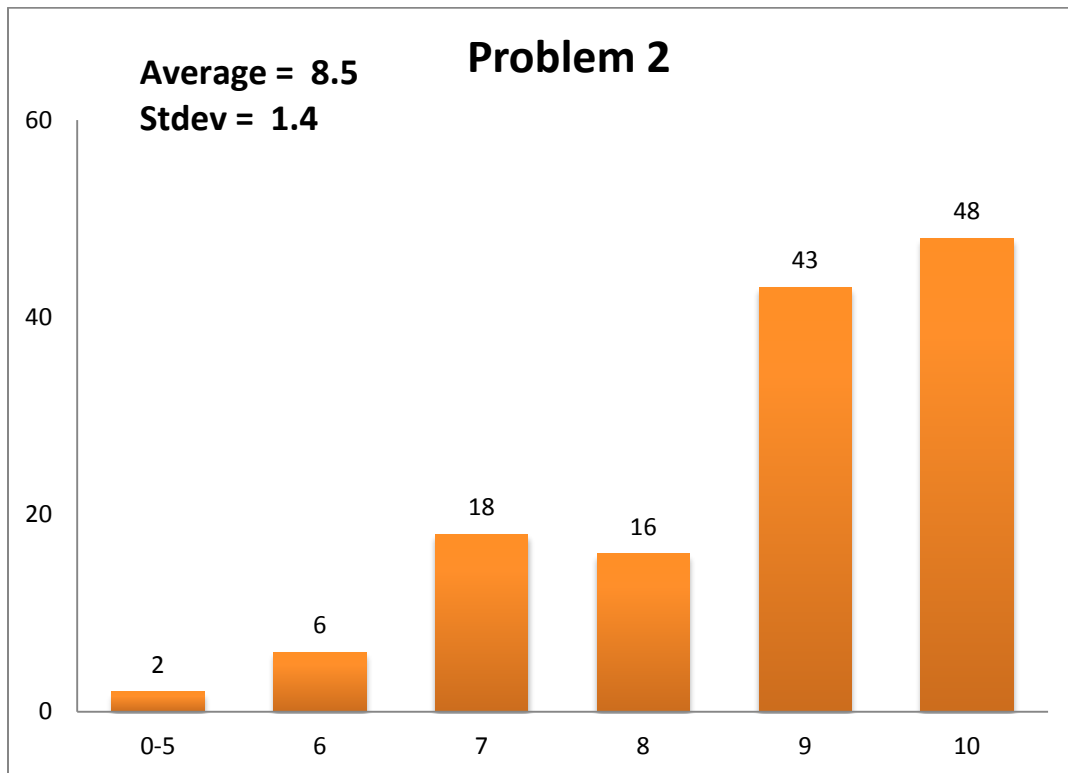
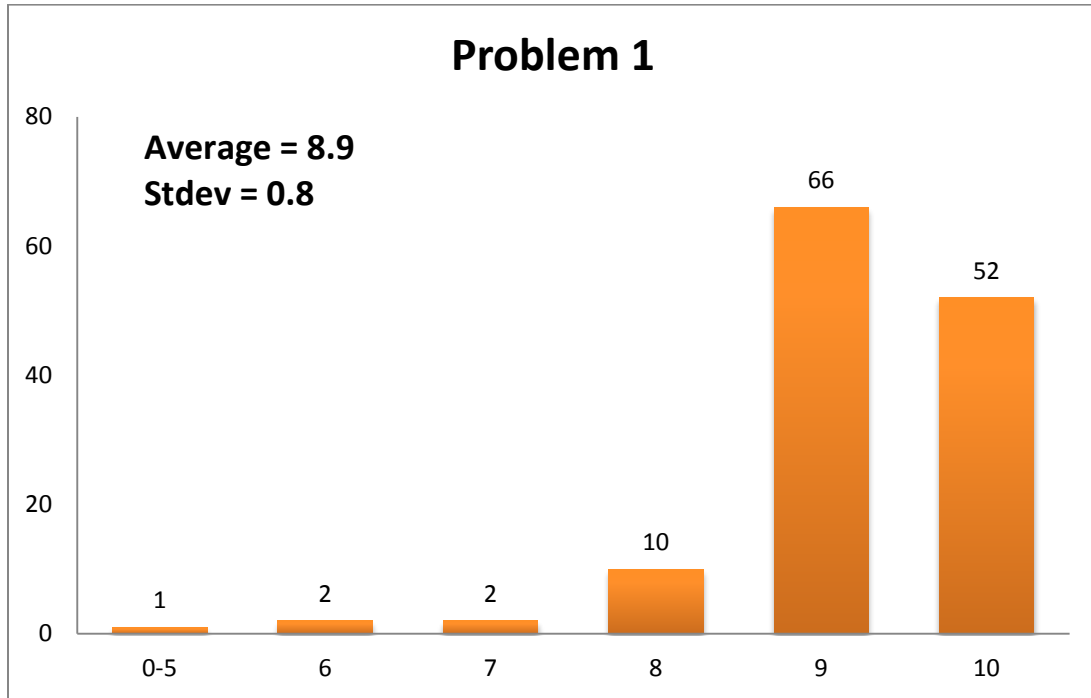
1. Summary

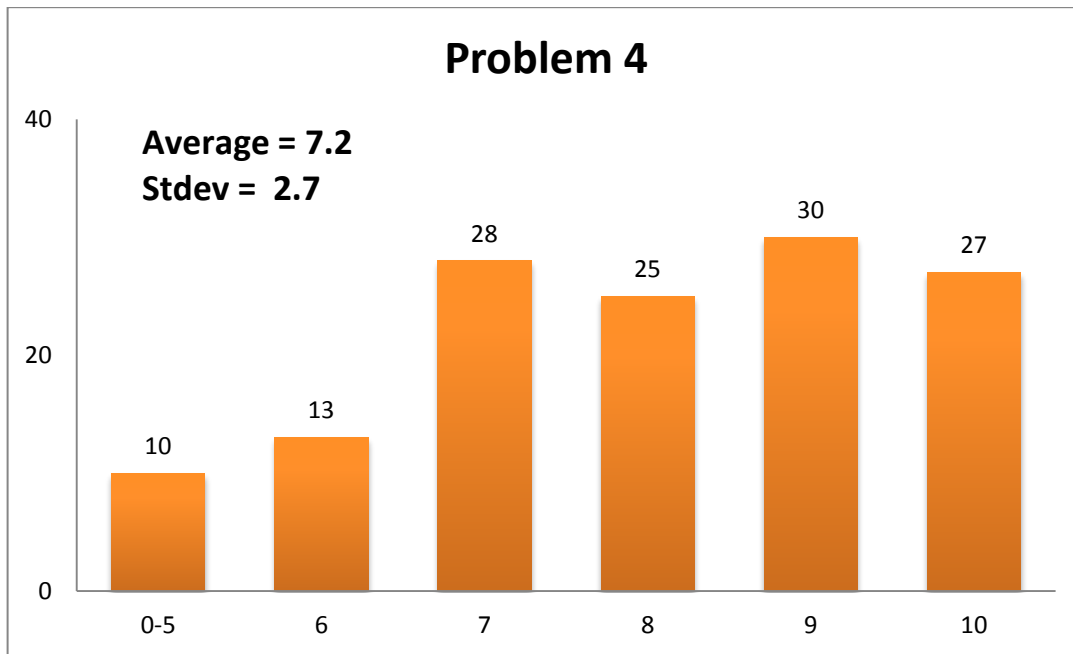
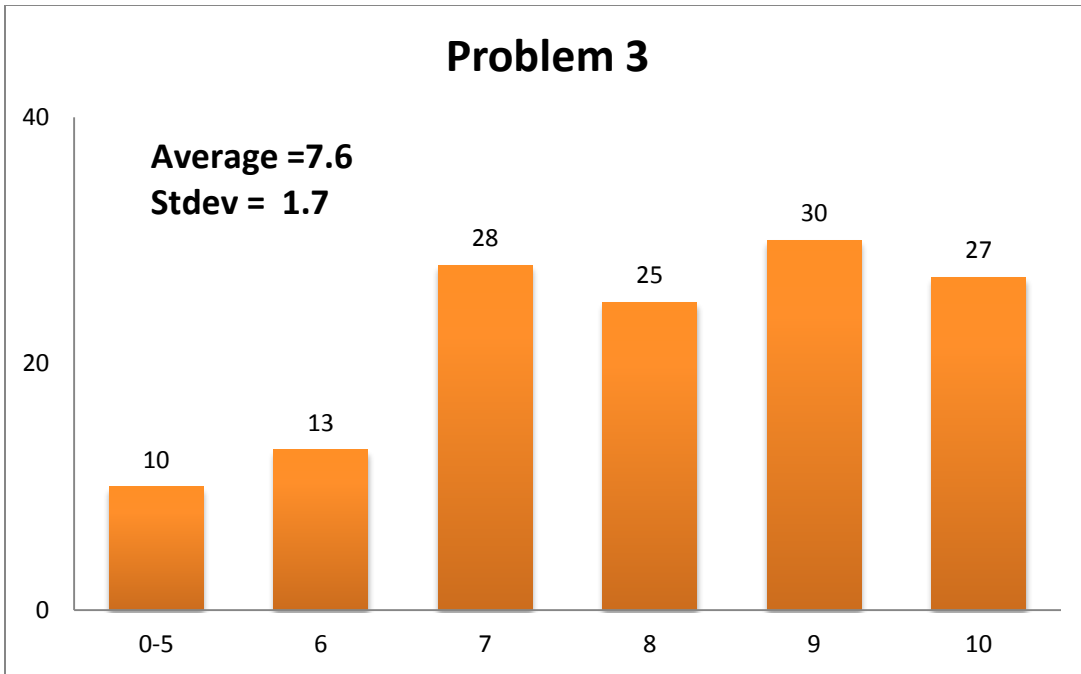
	Number of Students
Total	136
Attended	133
Missed	3
Makeup	0

2. Overall distribution

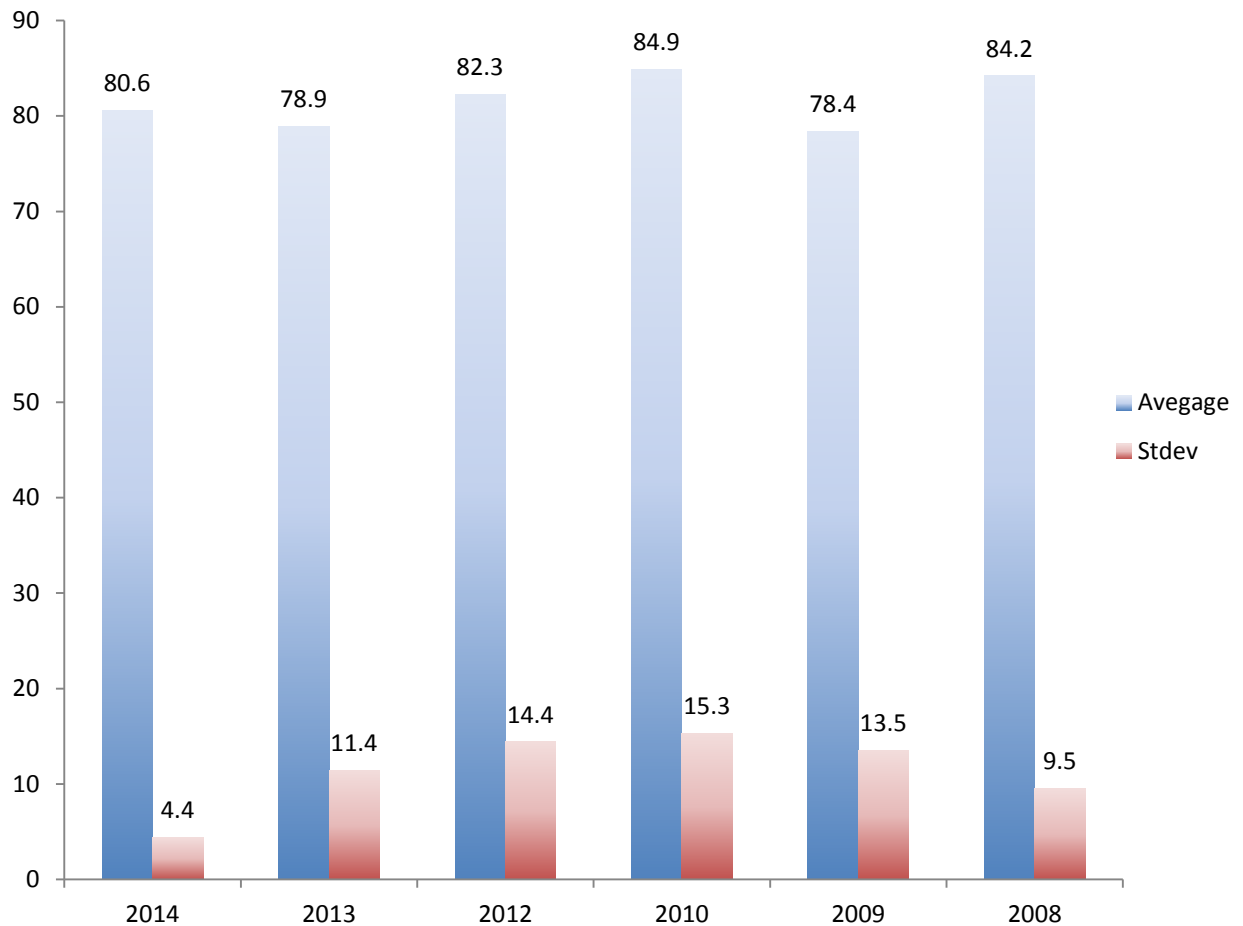


3. Distribution for each problem





Comparison with previous years



4. Common mistakes

1) Problem 1

- Calculating μ simply as $v \cdot \rho_{\text{water}}$ instead of $v \cdot \rho_{\text{water}} \cdot SG$
- Evaluating the shear stress at $y = h$ instead of $y = 0$
- Incorrectly calculating derivative du/dy
- Forgetting to multiply du/dy by μ (i.e., calculating $\tau = du/dy$ instead of $\tau = \mu \cdot du/dy$)

2) Problem 2

- Using second moment of inertia equation for half circle instead of rectangle for calculating the location of the horizontal force
- Student calculated the area for half circle instead of the projected rectangular area

3) Problem 3

- Didn't set V_2 to zero for the bernoulli equation
- Assumed that V_2 was equal to V_j
- Assumed that P_2 was zero
- When solving for the pressure they forgot to subtract gamma water from gamma mercury

4) Problem 4

- Did not evaluate at $x=-2a$ into the equations for velocity (point a) and acceleration (point b)
- Incorrectly calculating derivative du/dy
- Ignore/use the wrong sign in the expressions for acceleration and pressure gradient
- Few students did not understand that the velocity provided is already the x-component and make confusion between u , U and V
- Some students did not complete the problem because running out of town

5. Comments

- The average and standard deviation for the average score over six years is 81.5 and 2.8, respectively. Therefore the average score for 2014 is within the standard deviation over the six years.
- The lowest score was observed for Problem 4 which may be due to student running out of time.