MATH-1110 (DUPRÉ) FALL 2015 LECTURE QUIZ 1 ANSWERS

1. PRINT YOUR LAST NAME IN THE UPPER RIGHT CORNER IN LARGE CAPITAL LETTERS.

2. PRINT YOUR FIRST NAME UNDERNEATH YOUR LAST NAME IN THE UPPER RIGHT CORNER IN CAPITAL LETTERS.

3. PRINT YOUR LAB DAY AND LAB START TIME UNDERNEATH YOUR FIRST NAME IN THE UPPER RIGHT CORNER.

4. WRITE YOUR FALL 2015 MATH-1110 COURSE SECTION NUMBER UNDERNEATH YOUR LAB DAY IN THE UPPER RIGHT CORNER.

The remaining problems all use the information that follows. Suppose that Sam has an aquarium tank and he knows that the fish in his tank have an average weight of 8 grams with a standard deviation of 2 grams. Joe takes two fish from Sam's aquarium, one after another, but Sam does not see which fish Joe takes. Joe does not know anything about the weights of the fish in Sam's aquarium.

5. What should Sam EXPECT is the weight of the first fish Joe took from the aquarium?

ANSWER: Sam should expect the weight of the first fish to be 8 grams.

6. What should Sam EXPECT is the squared error in his expected weight of the first fish?

ANSWER: Since Sam expects the weight to be 8 grams, he should expect his squared error to be the variance which is 4.

6. What should Sam EXPECT is the total weight of both fish Joe took from the aquarium?

ANSWER: Sam should expect each of the fish weighs 8 grams so he should expect the total to be 16 grams.

7. If Joe guesses the weight of the first fish weighs 7 grams, then what is the squared error that Sam EXPECTS Joe makes?

ANSWER: Sam should expect that if Joe guesses the first fish weighs 7 instead of 8 grams, then Joe is making a squared error of

$$(7-8)^2 + 2^2 = 1 + 4 = 5.$$