Completion Time: 35 mi

PSYCHOLOGY 315/2, FALL 2014, LAB TEST I

Master File (Lari) — **Name**

ANSWER KEY — **Student Number**

Please note. You are not permitted to use worksheets developed in previous labs. All work must be done in the Excel workbook that you download from Moodle.

Question 1. (10 Marks)
The data in the accompanying workbook represent the grades of 500 students on an Art History Exam. Please answer the following questions.

The mean of the 600 scores is 60.556667.

The sum of the 600 scores is 36334.00000. → (being literal)

The sample variance of the 600 scores is 138.02683.

The sample standard deviation of the 600 scores is 11.74848.

The maximum score is 101.00000. → (again, literal re: decimals)

The minimum score is 28.00000.

The number of scores in the interval 66.5 to 92.5 is 187.00000. → I see why 5 decimals was not specified for this Q. But let's go with it!

Question 2. (12 Marks)

2.1 (2 Marks) If a normal distribution has a mean of 63.2 and a standard deviation of 9.63, what is the exact proportion of the distribution that lies below a score of 38.662? (Please give your answer to five decimal places.)

0.00542

2.2 (2 Marks) Rick learns that 43.229% of students scored lower than he did on a test that is known to produce normally distributed scores having a mean of 75.995 and a standard deviation of 12.3. What score did Rick get on the test? (Please give your answer to five decimal places)

73.89727

2.3 (2 Marks) IQ is normally distributed with a mean of 100 and a standard deviation of 15. What is the exact probability of randomly drawing an IQ of 88.1289 or less from this distribution? (Please give your answer to five decimal places.)

0.21435

2.4 (2 Marks) Statistics students in Quebec Universities score 67.884% on average on a test of basic reading ability. The standard deviation of the test scores is 12. If we choose 33 students at random and give them the test, what is the exact probability that the mean of these 33 scores will be 64.53 or greater? (Please give your answer to five decimal places.)

0.94582

2.5 (2 Marks) Statistics students in Quebec Universities score 67.884% on average on a test of basic reading ability. The standard deviation of the test scores is 12. If we choose 33 students at random and give them the test, what is the exact probability that the mean of these 33 scores will be between 64.53 and 66.312? (Please give your answer to five decimal places.)

0,17168

2.6 (2 Marks) Systolic blood pressure is normally distributed in adult Canadian males. The distribution has a mean of 110.398 and a standard deviation of 18.365. Rick's systolic blood pressure is 117. What proportion of Canadian males have a lower systolic blood pressure than Rick? (Rick is an adult Canadian male.)

0.64039

Question 3. (4 Marks)

An introductory perception course has two midterms and a final exam. The midterms are worth 30% each of the final grade, and the final exam is worth 40% of the final grade. Eeyore got 76.25% on the first test and 68.75% on the second test. What grade (expressed as a percentage) must he get on the final exam to achieve a final grade of 80%?

91.25000 %

Question 4. (4 Marks)

Below are a student's grades during a year at Concordia. What is the students GPA for this year?

Course	Number	Term	Section	Credits	Letter Grade	Grade Point
BIOL	233	/2	01	2	B	3
ITAL	621	/2	01	7	A	4
PSYC	258	/2	51	4	A+	4.3
PSYC	322	/2	01	4	A+	4.3
PSYC	316	/2	02	2	B+	3.3
BIOL	388	/4	02	6	B	3
PSYC	305	/4	05	7	B+	3.3
PSYC	311	/4	02	1	A+	4.3
PSYC	485	/4	03	3	A-	3.7
PSYC	332	/4	05	8	A+	4.3

GPA = 3,77045

Question 5. (10 Marks)

For each of the following situations, compute the limits of the (1-α)100% confidence interval.

5.1 (2 Marks) $m = 88$, $\sigma = 16$, $n = 23$, $\alpha = .05$ 81.46111 to 94.53889.

5.2 (2 Marks) $m = 88.321$, $\sigma = 43$, $n = 40$, $\alpha = .06$ 75.53368 to 101.10832.

5.3 (2 Marks) $m = 9.111$, $\sigma = 3.1415927$, $n = 17$, $\alpha = .33$ 8.36878 to 9.85322.

5.4 (2 Marks) $m = 100$, $\sigma = 15$, $n = 100$, $\alpha = .01$ 96.13626 to 103.86374.

5.5 (2 Marks) $m = 68.12$, $\sigma = 11.13$, $n = 8$, $\alpha = .04$ 60.03840 to 76.20160.