Prince Sultan University
STAT 101
First Examination
Second Semester 2010/2011, Term 102
Tuesday, 5h April 2011
Dr. Bahha Eldin Abdalla & Dr. Mohammed Al-Haj Ebrahem

Time Allowed: 90 minutes

Maximum points: 40 points

Name: _____ _____ _____
(First) (Middle) (Last)

ID Number: _____ Serial Number:_____ Section:_____

Important Instructions:

1. You may use CASIO scientific calculator that does not have programming or graphing capabilities.
2. You may NOT borrow a calculator from anyone.
3. You do NOT get special consideration if you forget your calculator.
4. Don't use notes or any notebook.
5. There should be NO talking during the examination.
6. Your exam will be taken immediately without any warning if your mobile is seen or heard.
7. You must show all your work beside the problem. Be organized.
8. You may use the back of the pages for extra space, but be sure to indicate that on the page with the problem.
9. This examination has **9** problems, some with several parts. Make sure that your paper has all these problems

Problem	Max points	Student's Points
1	2	
2	2	
3	2	
4	4	
5	2	
6	2	
7	2	
8	9	
9	15	
Total	***40***	

Q1 (2 points) Classify each as nominal-level, ordinal-level, interval-level, or ratio-level measurement:

a. Temperatures inside refrigerators.----------

b. Colors of baseball caps in a store.----------

Q2 (2 points) Identify each study as being either observational or experimental:

a. Subjects were randomly assigned to two groups, and one group was given an herb and the other group a placebo. After 6 months, the numbers of respiratory tract infection each group had were compared.----------

b. A researcher stood at a busy intersection to see if the color of the automobile that a person drives is related to running red lights.----------

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Q3(2 points) The mean of a distribution is 25 and the variance is 9. Use Chebyshev's theorem to find the percentage of the values that will fall between 20.5 and 29.5.

Q4 (4 points) Find the class boundaries and the width for each class limit

a. $5.4 - 7.3$

Class boundary:----------
Class width:----------

b. $3.16 - 5.82$

Class boundary:----------
Class width:----------

Q5 (2 points) If a data set of 10 measurements has mean equal 8 and variance equal 16, then calculate $\sum_{i=1}^{10} X_i^2$.

Q6 (2 points) If a data set of 8 measurements has mean equal 5 and variance equal zero, then calculate the median.

Q7 (2 points) If a data set of 4 measurements has mean equal 6, median equal 5 and mode equal 3, then calculate the range.

Q8 (9 points total) The following is the distribution of the grades of 20 students in STAT 101

Grade (Class Limits)	Number of students (f)
50 – 59	2
60 – 69	4
70 – 79	8
80 – 89	4
90 –99	2

1. ***(2 points)*** Construct a frequency polygon.

2. ***(1 point)*** Describe the shape of the distribution of the grades.

3. ***(1 point)*** Calculate the mode.

4. ***(1 point)*** Calculate the proportion of students had grade 80 or more?

5. ***(2 points)*** Calculate the sample mean.

6. ***(2 points)*** Calculate the sample variance.

Q9 (15 points total) Given the following data set: 11, 4, 24, 31, 15, 49

1. ***(1 point)*** Calculate the midrange.

2. ***(1 point)*** Calculate the percentile rank for the value 15.

3. ***(2 points)*** Calculate the sample standard deviation.

4. ***(2 points)*** Calculate the coefficient of variation.

5. ***(2 points)*** Calculate the interquartile range.

6. ***(2 points)*** Find the five-number summary.

7. ***(2 point)*** Construct a boxplot for the data.

8. ***(1 point)*** Use the boxplot, describe the shape of the distribution of the data.

9. ***(2 points)*** Check the above data set for outliers.

Good Luck