BIRZEIT UNIVERSITY
MATHEMATICS DEPARTMENT
Stat 236
Summer semester 2014/2015- First Exam

11441

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$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

Z – Score: $z = \frac{x - \mu}{\sigma}$

Correlation coefficient: $r = \frac{s_{xy}}{s_x s_y} = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}}$

Covariance: $s_{xy} = \frac{\sum (x - \bar{x})(y - \bar{y})}{n-1}$

Question # 1: (12 points) Circle the correct answer.

1. In purchasing an automobile, there are a number of variables to consider. The color of the car is an example of what type of variables.
   a. Qualitative data
   b. Discrete Quantitative data
   c. Continuous Quantitative data
2. The number of gallons of gasoline pumped by a filling station during a day is an example of :
   a. Ordinal b. Nominal c. Interval d. Ratio
3. In a Positively skewed distribution, one of the following is true.
   a. The median equals the mean.
   b. The median is less than the mean.
   c. The median is larger than the mean.
   d. There is no relation between the median and the mean.

Science college surveys 50 randomly sleeted days and found that the average temperature of those days is 25. Answer questions (4-7):

4. The number of elemnts:
   a. 1 b. 25 c. 50 d. None.
5. Determine whether the given value (25) is a statistic or a parameter
   a. Statistic.
   b. Parameter.

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6. Determine the scale of measurements:
   a. Ordinal b. Nominal c. Interval d. Ratio

7. The data collected are:
   a. Cross sectional data. b. Time series data.

8. During the past six months, the purchasing agent bought:
   1200 tons of coal at $28 a ton
   3000 tons of coal at $87a ton
   500 tons of coal at $88 a ton
   What is the mean price per ton?
   a. $87.25
   b. $68.47
   c. $89.18
   d. $72.04

9. A study indicates that the weights of 1200 adults are a symmetric distributed with mean of 140 lbs and standard deviation of 25 lbs. Approximately how many of them will weigh more than 165 lbs
   a. 1
   b. 16
   c. 192
   d. 816

10. According to the Chebyshev's rule, at least 55.5% of all observations in any data set are contained within a distance of how many standard deviations around the mean?
    a. 2
    b. 2.5
    c. 1.5
    d. 3

11. Which of the following statistics are resistant to outliers?
    I. The median
    II. The interquartile range
    III. The standard deviation
    a. I and II only
    b. I and III only
    c. II and III only
    d. I, II, and III
    e. None of the above.

12. A correlation of r = -0.95 indicates that the scatter diagram of the data would show:
    a. Points tightly packed around a line that slopes up to the right.
    b. Points tightly packed around a line that slopes down to the right.
    c. Points widely scattered around a line that slopes up to the right.
    d. Points widely scattered around a line that slopes down to the left.