STATISTICS WORKSHEET- 6

1 Which of the following can be considered as random variable?

ANSWER: d) All of the mentioned

2. Which of the following random variable that take on only a countable number of possibilities?

ANSWER:- Discrete

3. Which of the following function is associated with a continuous random variable?

ANSWER:PDF

4. The expected value or \_\_\_\_\_\_\_ of a random variable is the center of its distribution.

ANSWER:-MEAN

5. Which of the following of a random variable is not a measure of spread?

ANSWER:- empirical mean

6. The \_\_\_\_\_\_\_\_\_ of the Chi-squared distribution is twice the degrees of freedom.

ANSWER:- a) variance

7 The beta distribution is the default prior for parameters between \_\_\_\_\_\_\_\_\_\_\_\_

ANSWERc) 0 and 1

8. Which of the following tool is used for constructing confidence intervals and calculating standard errors for difficult statistics?

ANSWER:- ) bootstrap

9. Data that summarize all observations in a category are called \_\_\_\_\_\_\_\_\_\_ data

ANSWER:- b) summarized

10. 10. What is the difference between a boxplot and histogram?

ANSWER:- Histograms and box plots are graphical representations for the frequency of numeric data values. They aim to describe the data and explore the central tendency and variability before using advanced statistical analysis techniques.

Both histograms and box plots allow to visually assess the central tendency, the amount of variation in the data as well as the presence of gaps, outliers or unusual data points.

Both histograms and box plots are used to explore and present the data in an easy and understandable manner. Histograms are preferred to determine the underlying probability distribution of a data. Box plots on the other hand are more useful when comparing between several data sets. They are less detailed than histograms and take up less space

12. How do you assess the statistical significance of an insight?

**Answer:-**

**Steps in Testing for Statistical Significance**

1. State the Research Hypothesis  
   2) State the Null Hypothesis  
   3) Select a probability of error level (alpha level)  
   4) Select and compute the test for statistical significance  
   5) Interpret the results

14. The median better represents the central tendency for the skewed distribution. These data are based on the U.S. household income for 2006. **Income is the classic example of when to use the median instead of the mean because its distribution tends to be skewed.**

**15.** The likelihood is **the probability that a particular outcome is observed when the true value of the parameter is , equivalent to the probability mass on** ; it is not a probability density over the parameter . The likelihood, , should not be confused with , which is the posterior probability of given the data .

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