

1. Which numerical measure of a distribution's center is not sensitive to outliers?
2. Which numerical measure of a distributions' center is sensitive to outliers?
3. Which numerical measure of a distribution's spread is sensitive to outliers?
4. What is a skewed distribution?
5. How could a set of numbers have  $s = 0$ ?
6. What is an "influential point" in the context of regression?

7. What is a “lurking variable” in the context of regression?
  
  
  
  
  
  
  
  
  
  
8. Suppose  $S$  is the sample space for a random phenomenon. Calculate the probability of  $S$ .
  
  
  
  
  
  
  
  
  
  
9. What is  $E^C$ ? What is a formula for it's probability?
  
  
  
  
  
  
  
  
  
  
10. What is required for a probability model for a finite random variable to be valid?
  
  
  
  
  
  
  
  
  
  
11. Suppose  $A$  and  $B$  are independent events. What does this mean intuitively?
  
  
  
  
  
  
  
  
  
  
12. Two fair four sided dice are thrown. Let  $A$  be the event that the first comes up 3, and let  $B$  be the event the second comes up 3. Events  $A$  and  $B$  are
  - (a) Mutually Exclusive
  - (b) Independent
  - (c) Neither

13. A card is drawn from a well shuffled deck, returned, the deck reshuffled and a second card drawn Let A be the event that the first is a  $\heartsuit$ , and let B be the event the second is a  $\spadesuit$ . Events A and B are
- (a) Mutually Exclusive
  - (b) Independent
  - (c) Neither
14. Two fair six-sided dice are thrown Let A be the event that the sum is eleven, and let B be the event the second die turns up 2. Events A and B are
- (a) Mutually Exclusive
  - (b) Independent
  - (c) Neither
15. What assumptions are needed for using a binomial distribution?
16. A statistical test of hypotheses correctly carried out establishes the truth of one of the two hypotheses, either the null or the alternative one. T/F?
17. By doubling the sample size, we halve the margin of error of the confidence interval. T/F?

18. Explain why a hypothesis test that is significant at the 1% level must be significant at the 5% level.
19. A simple random sample of size 60 is taken from a normal population known to have a standard deviation of 5. The mean of the sample is 25. What is the sampling distribution of the mean?
20. A two-sample  $t$ -test gives a p-value of .95. From this result you can reject the null hypothesis with 95% confidence. T/F?
21. When computing expected counts for a  $\chi^2$  test, what do we assume is independent?
22. Name the underlying assumptions for utilizing the ANOVA procedure?