AP Statistics Questions

1. What is margin of error?
2. What is standard error?
3. How is the chi-square test statistic obtained?
4. Give two definitions of a confidence interval.
5. What must be true to combine standard deviations?
6. T/F A normal distribution can be used for discrete data.
7. What two things are assumed about a distribution when doing a hypothesis test?
8. When must you double the p-value?
9. If a distribution is skewed, when would you still be able to use a t-test?
10. If the mean is greater than the median, which way is the distribution skewed?
11. What does r^2 mean?
12. What does a positive residual mean?
13. How can you tell if a distribution is normal?
14. List the four things necessary to have a binomial distribution.
15. What is meant by the correction factor when using the z approximation to the binomial distribution?
16. What is the null hypothesis for the chi-square test for independence?
17. What is another name for the "matched pairs t-test"?
18. What does the Central Limit Theorem say and when should it be used?
19. Does a parameter refer to a population or a sample?
20. What does it mean for a test to be significant at the 5% level?
21. Finding a 95% confidence interval is equivalent to doing what kind of test?
22. What is a type I error?
23. What is the IQR?
24. How do you find an outlier?
25. What is the 5-number summary?
26. For a Normal Distribution, what % of data fall within 1, 2, and 3 standard deviations of the mean?
27. Name a type of graph that is resistant to outliers?
28. What should be discussed when describing a stem and leaf plot?
29. What does N(0,1) mean?
30. In a scatterplot, which is the explanatory variable?
31. In a LSR line, predicting a value for y that is outside the range of x is called:

32. What is a lurking variable?

33. What is the difference between an influential observation and an outlier?

34. What is anecdotal evidence?

35. Name the types of randomization.

36. Failure to use probability sampling can result in what?

37. What does conditional probability mean?

38. What does the Law of Large Numbers state?

39. When doing a linear transformation on data, what is the new variance?

40. When do you use a z test?

41. What does B(10, .3) mean?

42. What happens to the margin of error when the sample size increases?

43. What is a p-value?

44. What is meant by the degrees of freedom?

45. What happens to the standard deviation if all data is multiplied by a 5?

46. What is the pooled estimator?

47. What kind of test statistic is used for a proportions test?

48. How do you find the expected value in a chi-square independence test?

49. When should the chi-square test not be used?

50. What is the test statistic for testing the slope of a LSR line?

51. Explain inference on linear regression.

52. When is it a good idea to do blocking in an experiment?

53. What must a study have to be considered an experiment?

54. How do you reduce variablility when doing sampling?

55. Explain specifically what is meant by minimum, Q1, median, Q3 and maximum.

56. How do you calculate standard deviation by hand?

57. How do you calculate residuals by hand?

58. A regression equation is TEST GRADE = 55.67 + 10.8(HOMEWORK GRADE). Explain what the slope of this equation means.

59. What must the null hypothesis always contain?

60. In a hypothesis test for the difference of means where the population standard deviation is unknown, what are the two types of tests possible and when do you use them?

61. Name the types of sampling methods and explain each.

62. What are the three types of experimental designs?