# QM213 Review Questions Week 7 part 2: Confidence Intervals

1. A parametric statistic is based on the values of a ___.
2. When using the Normal approximation to compute the confidence limits of a proportion based on a sample proportion, which of these conditions must be true for a non-infinite population?
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4. When using the Normal approximation to compute the confidence limits of a proportion based on a sample proportion, which of these conditions must be true for a non-infinite population?
5. Why is it necessary to compute a ratio and two products before applying the Normal approximation for estimating population proportions and their confidence limits based on sample proportions?
6. When using the Normal approximation to compute the confidence limits of a proportion based on a sample proportion, which of these sample sizes would be UNACCEPTABLE if the population has exactly 1,000 members?
7. When using the Normal approximation to compute the confidence limits of a proportion based on a sample proportion $p = 0.1$, which of these sample sizes would be ACCEPTABLE?
8. When using the Normal approximation to compute the confidence limits of a proportion based on a sample proportion $p = 0.4$, which of these sample sizes would be ACCEPTABLE?
9. The purpose of statistical inference is to provide information about the ___.
10. In point estimation ___.
11. An estimate of a population parameter that provides an interval of values believed to contain the value of the parameter with a certain probability of being right is known as a[n] ___.
12. A 95% confidence interval for a population mean of maximum speed for a type of car is determined to be 100 to 120. Therefore we can state that ___.
13. For the interval estimation of $\mu$ when $\sigma$ is known and the sample size (n) is large, the proper distribution to use is ___.
14. Whenever the population standard deviation is known and the population has a Normal or near-Normal distribution, which distribution is used in developing an interval estimate for the parametric mean?
15. From a population that is Normally distributed, a sample of 25 elements is selected and the standard deviation of the sample is computed. For the interval estimation of m, the proper distribution to use is the ___.
16. When the sample standard deviation is used to estimate the parametric standard deviation, the margin of error for the estimate of the parametric mean is computed by using ___.
17. To determine an interval estimate for the mean of a population with unknown standard deviation a sample of 61 items is selected. The mean of the sample is determined to be 23. The degrees of freedom for finding the critical value associated with the Student's t distribution needed to compute the interval estimate is ___.
18. As the number of degrees of freedom for a Student's t distribution increases, the difference between the t distribution and the standard Normal distribution ___.
19. Whenever the population standard deviation is unknown and the population has a Normal or near-Normal distribution, which distribution is used in developing an interval estimation?
20. In interval estimation for the population mean based on a sample mean, the t distribution is applicable when ___.
21. In developing an interval estimate for the parametric mean, if the parametric standard deviation is unknown ___.
22. If we change a 95% confidence interval estimate to a 99% confidence interval estimate, we can expect ___.
23. In general, higher confidence levels provide ___.
24. When constructing a confidence interval for the population mean and the standard deviation of the sample is used, the degrees of freedom for the t distribution based on a sample of size n equals ___.

25. A working assumption made about the value of a population parameter is called a(n) ___.
26. When the sample standard deviation is used to estimate the parametric standard deviation, the margin of error for the estimate of the parametric mean based on a sample mean is computed by using the ___.
27. As the sample size increases, the confidence interval for estimates of the mean tends to ___.
28. Using a level of significance a 0.01, a confidence interval for a population proportion is determined to be 0.35 to 0.45. If the level of significance is decreased, the confidence interval for the estimate of the population proportion ___.
29. After computing a confidence interval, the user believes the results are meaningless because the width of the interval is too large. Which one of the following is the best recommendation to solve the problem?
30. In computing the confidence limits for a mean, a statistician looks up the critical value for the Student's t distribution that defines 0.005 in the left tail and 0.005 in the right tail. What is the confidence level being used for the confidence limits being computed?
31. What is the theoretical distribution for sample variances?
32. Which of the Excel functions calculates the value of a chi-square distribution x2[a] for which the probability of being equal to or lower than x2[a] is a?
33. Which of the Excel functions calculates the value of a chi-square distribution x2[a] for which the probability of being equal to or greater than x2[a] is a?
34. When computing confidence limits for a mean, one should expect the limits to be ___.
35. When computing confidence limits for a variance one should expect the limits to be ___.
36. Which of the following statistics that you have never heard of is most likely to be a parameter?
37. μ is an example of a ___.

 