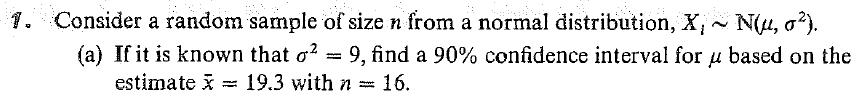
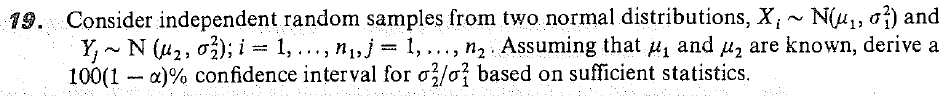
Name:

Question 1 (11.1a in the textbook)

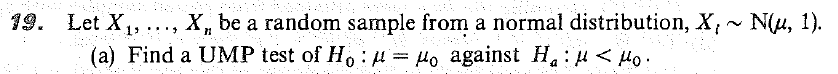


Note that z0.95 = 1.645, t0.95(15) = 1.753, t0.95(16) = 1.746, t0.95(17) = 1.740, χ20.95(15) =24.996 , χ20.95(16) = 26.296, χ20.95(17) = 27.587.

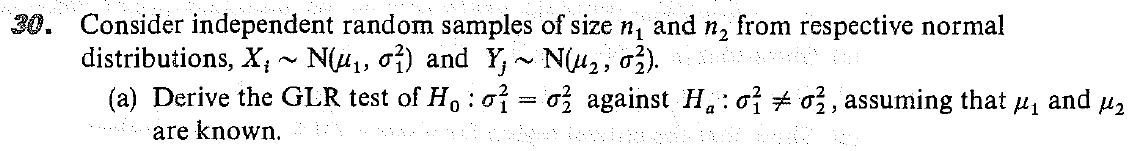
Question 2 (11.19 in the textbook)



Question 3 (12.19a in the textbook)



Question 4 (12.30a from the textbook)



Question 5

Circle only the statements that are true. You will get 1 point for 6 correct answers; 2 points for 7 correct; 3 points for 8 correct; 4 points for 9 correct. In other words, you will get max(# correct – 5, 0) points for this problem.

1. A random interval that contains the parameter of interest with 95% probability is called a confidence interval for the parameter of interest.
2. If two researchers use the exact same data from an experiment and report different confidence intervals for the same parameter, then one or both of them has made a mistake.
3. A two-sided equal-tailed confidence interval is most appropriate when a drug company wants to establish (with 95% confidence) that no more than 5% of people will have an allergic reaction to a birth control patch that they are developing.
4. MLE – θ is a pivotal quantity for θ if MLE is a maximum likelihood estimator for θ and θ is a scale parameter.
5. Pivotal quantities are sometimes functions of the random sample but not the parameter of interest.
6. If (1, 2) is a 95% confidence interval for μ, then (1, 4) may sometimes not be a 95% confidence interval for μ2.
7. If the null hypothesis is not rejected, then you should conclude that the alternative hypothesis is plausible.
8. The Neyman-Pearson lemma provide a method to obtain the most powerful test of a simple null hypothesis against a two-sided alternative.
9. The generalized likelihood ratio test provides a reasonable test, whose test statistic is the likelihood ratio, and whose distribution under the null hypothesis is χ2(r), where r parameters are fixed under the null.

