1.   Describe the Type I and Type II errors for a hypothesis test of the following claim: A computer repair company advertises that the mean cost of removing a computer virus is less than $100. Remember to state the null and alternative hypotheses first.

Find the critical value(s) and rejection region(s) for the type of t-test with the level of significance and sample size given.

2.   left-tailed, $\alpha = 0.10$, $n = 20$ 3.   right-tailed, $\alpha = 0.05$, $n = 36$

4.   two-tailed, $\alpha = 0.01$, $n = 42$

5.   Use the calculator to get a P-value given that the population mean is 32.5, the sample mean is 32, the sample standard deviation is 2.35, and the sample size is 45. Assume a left-tailed test. If the level of significance is $\alpha = 0.05$, would you reject or fail to reject H_0?

Complete a full hypothesis test for the proportion or mean using either a z-test or t-test based on the problem. Include the hypotheses, type of test (left-tailed, right-tailed or two-tailed, sketch, either the P-value or critical value(s) and rejection region(s), the standardized test statistic (either z or t), decision to reject or fail to reject H_0, and interpret the decision in the context of the original claim. Assume the population is normally distributed.

6.   The average credit card debt of college students is $3262. A college feels that students have much less credit card debt (so their claim is that college students have less than $3262 of credit card debt). In a random study of 50 college students, the mean credit card debt was $2995 and the standard deviation was $1100. At the level, $\alpha = 0.05$, determine whether to reject or fail to reject the college's claim.

7. A study claims that 68% of the population owns a home. In a random sample of 150 households, 92 owned a home. At the $\alpha = 0.01$ level, is there enough evidence to support the claim?

8. The medical association claims there are at most 27% female physicians. In a survey of physicians, 45 of the 120 were women. Is there sufficient evidence to support the medical association at the $\alpha = 0.01$ level of significance?

9. The average amount of taxes paid by a family of four is greater than $4172. A random sample of 20 families found that an average of $4560 was paid in taxes with a standard deviation of $1590. At $\alpha = 0.10$, is there evidence to support that families pay more than $4172?