Name:	Date:	
Elementary Statistics	HW 8.4 part 1	

 Twelve different video games showing alcohol use were observed. The duration times of alcohol use were recorded, with the times (in seconds) listed below. Assume that you are testing the claim that the sample is from a population with a <u>mean</u> greater than 90 seconds.

84	583	0	207	178	2
14	50	57	43	0	57

- a. What requirements must be satisfied to test this claim? Are these requirements satisfied?
- b. If we use a "t-test" of the claim that the population mean is greater than 90 seconds, what does df denote? What is the value of df?
- c. When testing a claim involving the population mean, why are you more likely to use a "t-test" than a "z-test"?
- 2. Data Set 11 in Appendix B lists ages of actresses when they won Oscars, and the summary statistics are: n = 82,  $\underline{x} = 35.9$  years and s = 11.1 years. Use a 0.01 significance level to test the claim that the mean age of actresses when they win Oscars is 33 years.
  - Step 1: What is the claim in symbolic form? Also, state the "opposite of the claim"

Step 2: What are the null and alternative hypotheses?

Step 3: Is the test two-tailed, left-tailed, or right-tailed?

**Step 4:** What is the value of  $\alpha$ ?

Step 5: What is the critical value(s)?

Step 6: What is the value of the test statistic?

<u>Step 7</u>: Does the test statistic fall inside the critical region? So, should we reject the null hypothesis or fail to reject the null hypothesis?

<u>Step 8</u>: What is the written conclusion based on the original claim and your answer to part e?

3. The weights (in pounds) of discarded plastic from a sample of households is listed in Data Set 23 in Appendix B and the summary statistics are: n = 62,  $\underline{x} =$ 1.911 lb and s = 1.065 lb. Use a 0.05 significance level to test the claim that the mean weight of discarded plastic from the population of households is greater than 1.800 lb. (Don't forget to include all 8 steps outlined in question 2)