Name: _____

Instructions: For all the questions below you must:
  a) *Explicitly state H_0 & H_A using correct notation,*
  b) *Give the correct critical value &/or test statistics (work too)*
  c) *Represent on alpha &/or critical value and test statistic on a diagram*
  d) *State the decision using reject & accept H_0 & H_A as appropriate*
  e) *Correctly state the conclusion using the wording in the original question & either CL or alpha*
  f) *Give a confidence interval for the data*

Question 1:   The table shows the number of satisfied in their work in a sample of working adults with a college education and in a sample of working adults without a college education. Does the data provide sufficient evidence to support the claim that the proportion of working adults without a college education is lower than the proportion of those with a college education? Use a significance level of 10%.

	College Education	No College Education
Number in sample	170	160
Number satisfied in work	74	68

Question 2:   The table shows the means and standard deviations of the response times of two cab companies, based upon 40 randomly selected calls from each. The calls were made independently of one another to each company. Test the claim that the mean response time for Company A is higher than Company B, using a 95% confidence level.

	Company A	Company B
Mean Response Time	7.6 minutes	6.9 minutes
Standard Deviation	1.4 minutes	1.7 minutes

Question 3:   The table below shows the number of gallons of water a day that 10 different families use before and after viewing a conservation video. Test the claim that the average difference before and after is more than 1.75 gallons using a significance level of 10%.

	Fam1	Fam2	Fam3	Fam4	Fam5	Fam6	Fam7	Fam8	Fam9	Fam10
Before	33	33	38	33	35	35	40	40	40	31
After	34	28	25	28	35	33	31	28	35	33

Question 4:   The following data represents the reported heights (in inches) of 17 men. Men's heights are known to be normally distributed. Test the claim that standard deviation is different than 2.8 inches. Use a 99% confidence level.

67.5, 65, 69, 67, 70.5, 73, 68, 69, 66, 69, 66, 67.5, 69, 69, 73.5, 70, 72

Extra Credit: A researcher was interested in comparing the amount of time spent watching television by women and by men. Independent simple random samples of 15 women and 16 men were selected and each person was asked the number of hours he or she had watched TV during the previous week. It is assumed that the population standard deviations of men and women's average TV watching time are the same. If the 15 women's average time watching TV was 12.9 hours with a standard deviation of 4.2 hours and the 16 men's average time watching TV was 16.3 hours with a standard deviation of 4.4 hours test the claim that men time watching TV is greater than women's using a a significance level of 1%.