11. The results of a trial by Merck KGaA for ImClone found that the drug Erbitux in combination with chemotherapy slowed the progression of colon cancer and found that the average survival time of the 164 patients was 8.6 months with a standard deviation of 3.7

a) Find a 95% confidence interval for the average survival time.

b) The average survival time for such patients without the treatments is believed to be about 3 months. Does the combination work better at the 5% level of significance? Explain.

12. A newspaper wants to estimate the percent of adults that read a newspaper. How large a sample do they need if they want a margin of error of 3% at the 90% confidence level?

13. A company is checking to see if a machine is putting the correct amount into boxes. A random sample of 400 boxes finds that average amount put into the box is 12.04 ounces with a standard deviation of 0.4 ounces. Test at the .05 level to see if the mean is 12 or if it is more.

a) Write the null and alternate hypotheses.

b) Do a hypothesis test at the 5% level. Decide if you accept or reject the null hypothesis and explain what that means here. Show your work.