

BIOMETRY, CLASS EXERCISE 11

- (1) A small brewery monitors the alcohol content of its beer by taking 6 samples from every vat brewed. The following are the percent alcohol content data for the sample taken from the last vat:

5.3 5.0 5.1 5.4 5.3 5.3

a) Calculate the mean and the standard deviation for the alcohol content of the sample.

b) Assuming the population is approximately normally distributed construct a 98% confidence interval for the mean alcohol content.

- (2) A researcher believes that in recent years women have been getting taller. She knows that 10 years ago the average height of young adult women living in her city was 63 inches. The standard deviation is unknown. She randomly samples eight young women residing in her city and measures their heights. The following data is obtained:

64 66 68 60 62 65 66 63

Based on this sample, can the researcher state with 95% confidence that the average height of women changed in the past 10 years? Assume the population is approximately normal.