SEIS 631

Dan Ward

Assignment 5

**Question 1 [MULTIPLE CHOICE] For the confidence interval to be valid, the sample mean must be normally distributed and have standard error s/sqrt(n). Which of the following is not a condition needed for this to be true?**

(b) The sample size, 60, is less than 10% of all houses.

**Question 2 [MULTIPLE CHOICE] What does “95% confidence” mean?**

(a) 95% of the time the true average area of houses in Ames, Iowa, will be in this interval.

**Question 3: Does your confidence interval capture the true average size of houses in Ames?**

Yes, the true mean was 1499.69 and my confidence interval is (1334.984,1568.449)

**Question 4: Does this proportion of confidence intervals that include the true population mean, exactly equal to the confidence level? If not, explain why.**

It does not, the confidence level is 95% and 2 of the 50 intervals did not include the mean, which is 96% that did. Based on the number of samples we took it isn’t possible to have an integer pass/fail mix that would have yielded exactly 95%.

**Question 5: Question 5 [MULTIPLE CHOICE] What is the appropriate critical value for a 99% confidence level?**

(e) 2.58

**Question 6:** **Calculate 50 confidence intervals at the 99% confidence level. You do not need to obtain new samples, simply calculate new intervals based on the sample means and standard deviations you have already collected. Using the plot\_ci function, plot all intervals and calculate the proportion of intervals that include the true population mean. What proportion do you get?**

50 out of 50 include the true population mean.