

Mrs. Daniel- AP Stats
8.1 WS

Losing Weight

A Gallup Poll in November 2014 found that 59% of the people in its sample said “Yes” when asked, “Would you like to lose weight?” Gallup announced: “For results based on the total sample of national adults, one can say with 95% confidence that the margin of (sampling) error is ± 3 percentage points.”

(a) Explain what the margin of error means in this setting.

(b) State and interpret the 95% confidence interval.

(c) Interpret the confidence level.

The admissions director from Florida International University found that (107.8, 116.2) is a 95% confidence interval for the mean IQ score of all freshmen. **Comment on whether or not each of the following explanations is correct.**

(a) There is a 95% probability that the interval from 107.8 to 116.2 contains μ .

(b) There is a 95% chance that the interval (107.8, 116.2) contains μ .

(c) This interval was constructed using a method that produces intervals that capture the true mean in 95% of all possible samples.

(d) 95% of all possible samples will contain the interval (107.8, 116.2).

(e) The probability that the interval (107.8, 116.2) captures μ is either 0 or 1, but we don't know which.

How do Confidence Intervals Change...

(a) How does the shape of the confidence interval change if the confidence level increases from 90% to 95%?

(b) How would the shape of a confidence change if the sample size was decreased? Assume the new, smaller sample size still meets all of the normality conditions.