Module 4 Quiz

Adapt 236

1/1 point (graded)

One hundred (100) randomly chosen high school students were asked if they had ever smoked marijuana. Sixty (60) students answered, and 25% said that they had smoked marijuana. The school officials reported that 25% of the high school students had smoked marijuana. Is this research biased? If so, which bias was exhibited?

- The research was not biased.
- Response bias ✔
- Selection bias
- Publication bias

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Adapt 241

1/1 point (graded)

One 16-ounce bottle of an energy drink has an average of 500 mg of caffeine with a standard deviation of 25 mg. In a carton containing 30 bottles, what is the standard deviation of the average amount of caffeine?

- 0.83
- 1.20
- 4.56 ✔
- 25.0

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Adapt 244

1/1 point (graded)

Assume that 8% of all Americans have diabetes. In a random sample of 50 Americans, what is the standard deviation of the proportion of people in the sample that have diabetes?

- 0.01
- 0.03
- 0.04 ✔
- 0.06

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Adapt 247

0/1 point (graded)

One 16-ounce bottle of an energy drink has an average of 400 mg of caffeine with a standard deviation of 20 mg. What is the probability that the average caffeine in a sample of 25 bottles is no more than 395 milligrams?

- 0.05

- 0.11
- 0.16 ✖
- 0.22

Submit You have used 1 of 1 attempt

✖ Incorrect (0/1 point)

Adapt 250

1/1 point (graded)

A drawer contains 4 capsules numbered 1, 3, 5, and 7. A sample of size 2 is drawn with replacement. What is the standard deviation of x-bar?

- 1.24
- 1.58 ✔
- 1.66
- 1.75

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Adapt 256

1/1 point (graded)

An auditor is trying to estimate the average size of an invoice. A sample of 64 invoices from a large population of invoices yields a mean of $300 with a standard deviation of $40. What is the 99% confidence interval?

- ◉ [$287, $313] ✔
- ○ [$290, $310]
- ○ [$291, $309]
- ○ [$298, $302]

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Adapt 267

1/1 point (graded)

Your company manufacturers Bluetooth chips. To estimate the fraction of defective chips, you sample 100 chips, and find 4 are defective. You are 95% sure the actual percentage of defective Bluetooth chips is within which of the following ranges?

- (•) [.002,.078] ✔
- ( ) [.013,.107]
- ( ) [.002,.060]
- ( ) [.013,.072]

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Adapt 271

1/1 point (graded)

A company with 500 employees wants to estimate the fraction of employees whose commute to work exceeds 60 minutes. They survey 200 employees and find 60% of those surveyed have a commute exceeding 60 minutes. They are 95% confident that the actual fraction of employees whose commute exceeds 60 minutes is within which of the following ranges? Apply the finite correction factor to your answer.

- 53.2% to 66.8%
- 54.7% to 65.3% ✔
- 55.1% to 64.8%
- 56.5% to 63.5%

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Adapt 274

1/1 point (graded)

We are trying to estimate the average salary of employees at a company. Assume the standard deviation of employee salaries is $20,000, and we want to be 95% sure our estimate is accurate within $3000. What size sample is needed?

- 62
- 85
- 170 ✔

246

Submit You have used 1 of 1 attempt

✔ Correct (1/1 point)

Adapt 283

1/1 point (graded)

A company with 400 employees wants to estimate the average commuting time for its employees. They believe the standard deviation of the commuting time of employees is 10 minutes. If they want to be 95% confident that there estimate of mean commuting time is accurate within 5 minutes, what sample size is needed? Apply the finite correction factor to obtain your answer.

10

15 ✔

20

25

You have used 1 of 1 attempt

Submit

✔ Correct (1/1 point)

Adapt 288

0/1 point (graded)

If you obtain 0 successes or n successes when using n trials to estimate a population proportion, our formula for a 95% confidence interval breaks down and has a width of 0. In these situations, the formulas in Module4Quiz_Blyth.xlsx enable us to compute 95% confidence intervals for a population proportion.

Suppose in 10,000 knee replacements at a hospital, none resulted in infections. You are 95% sure the real chance of an infection on a knee replacement falls within which interval?

- [0, .0001]
- [0, .0002]
- [0, .0003]
- [0, .0004] ✖

Submit You have used 1 of 1 attempt

✖ Incorrect (0/1 point)

Adapt 292

0/1 point (graded)

If you obtain 0 successes or n successes when using n trials to estimate a population proportion, our formula for a 95% confidence interval breaks down and has a width of 0. In these situations, the formulas in Module4Quiz_Blyth.xlsx enable us to compute 95% confidence intervals for a population proportion.

Suppose that 50 samples of water were tested for contamination, and all samples were positive. You are 95% sure the real chance that the water is contaminated falls within which interval?

- [.942, 1]
- [.952, 1]
- [.962, 1] ✖
- [.972, 1]

Submit You have used 1 of 1 attempt

✖ Incorrect (0/1 point)