Data Analysis and Statistical Inference
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In-Video Quiz Questions for
Unit 5: Part 1 – (2) Confidence Interval for a Proportion

(06:23) – slide 6, after "Not too shabby."

1. Which of the following is the true based on this confidence interval?

(a) 95% of random samples of 670 Americans will yield confidence intervals that contain the true proportion of Americans who have good intuition about experimental design.

(b) 95% of the time this confidence interval is correct.

(c) 95% of random samples of 670 Americans will have sample means within this interval.

(d) 95% of random samples of 670 Americans will yield confidence intervals that fall within this interval.

(09:58) – slide 8, after "because we definitely don't want to make a mistake and have to re due our sampling."

2. If we wanted to estimate the percentage of Data Analysis and Statistical Inference students who have good intuition about experimental design using a 95% confidence interval and a margin of error no larger than 3%, at least how many students would we need to sample?

(a) 33

(b) 278

(c) 544

(d) 1068

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Answers:

1. a

Explanation: The confidence level is about percentage of samples that yield intervals capturing the population parameter, not about predicting where future samples will fall.

2. d

Explanation: Use 0.5 for the unknown sample proportion:

1.962 * 0.5 * 0.5/0.032 = 1067.111 -> at least 1068 students