

Question ID 85939da5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Inference from sample statistics and margin of error	<div style="width: 100%;"><div style="width: 75%; background-color: #005a9f;"></div></div>

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Texting behavior	Talks on cell phone daily	Does not talk on cell phone daily	Total
Light	110	146	256
Medium	139	164	303
Heavy	166	74	240
Total	415	384	799

In a study of cell phone use, 799 randomly selected US teens were asked how often they talked on a cell phone and about their texting behavior. The data are summarized in the table above. Based on the data from the study, an estimate of the percent of US teens who are heavy texters is 30% and the associated margin of error is 3%. Which of the following is a correct statement based on the given margin of error?

- A. Approximately 3% of the teens in the study who are classified as heavy texters are not really heavy texters.
- B. It is not possible that the percent of all US teens who are heavy texters is less than 27%.
- C. The percent of all US teens who are heavy texters is 33%.
- D. It is doubtful that the percent of all US teens who are heavy texters is 35%.

ID: 85939da5 Answer

Correct Answer:

D

Rationale

Choice D is correct. The given margin of error of 3% indicates that the actual percent of all US teens who are heavy texters is likely within 3% of the estimate of 30%, or between 27% and 33%. Therefore, it is unlikely, or doubtful, that the percent of all US teens who are heavy texters would be 35%.

Choice A is incorrect. The margin of error doesn't provide any information about the accuracy of reporting in the study. Choice B is incorrect. Based on the estimate and given margin of error, it is unlikely that the percent of all US teens who are heavy texters would be less than 27%, but it is possible. Choice C is incorrect. While the percent of all US teens who are heavy texters is likely between 27% and 33%, any value within this interval is equally likely. We can't be certain that the value is exactly 33%.

Question Difficulty:

Hard