

Question ID ef173fc1

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Inference from sample statistics and margin of error	<div><div></div><div></div><div></div></div>

ID: ef173fc1

To estimate the proportion of a population that has a certain characteristic, a random sample was selected from the population. Based on the sample, it is estimated that the proportion of the population that has the characteristic is **0.49**, with an associated margin of error of **0.04**. Based on this estimate and margin of error, which of the following is the most appropriate conclusion about the proportion of the population that has the characteristic?

- A. It is plausible that the proportion is between **0.45** and **0.53**.
- B. It is plausible that the proportion is less than **0.45**.
- C. The proportion is exactly **0.49**.
- D. It is plausible that the proportion is greater than **0.53**.

Question ID 206e4916

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Inference from sample statistics and margin of error	<div><div></div><div></div><div></div></div>

ID: 206e4916

A sample consisting of **720** adults who own televisions was selected at random for a study. Based on the sample, it is estimated that **32%** of all adults who own televisions use their televisions to watch nature shows, with an associated margin of error of **3.41%**. Which of the following is the most plausible conclusion about all adults who own televisions?

- A. More than **35.41%** of all adults who own televisions use their televisions to watch nature shows.
- B. Between **28.59%** and **35.41%** of all adults who own televisions use their televisions to watch nature shows.
- C. Since the sample included adults who own televisions and not just those who use their televisions to watch nature shows, no conclusion can be made.
- D. Since the sample did not include all the people who watch nature shows, no conclusion can be made.

Question ID e76d325a

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Inference from sample statistics and margin of error	<div><div></div><div></div><div></div></div>

ID: e76d325a

A company that produces socks wants to estimate the percent of the socks produced in a typical week that are defective. A random sample of **310** socks produced in a certain week were inspected. Based on the sample, it is estimated that **12%** of all socks produced by the company in this week are defective, with an associated margin of error of **3.62%**. Based on the estimate and associated margin of error, which of the following is the most appropriate conclusion about all socks produced by the company during this week?

- A. **3.62%** of the socks are defective.
- B. It is plausible that between **8.38%** and **15.62%** of the socks are defective.
- C. **12%** of the socks are defective.
- D. It is plausible that more than **15.62%** of the socks are defective.

Question ID ab974dd3

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Inference from sample statistics and margin of error	<div><div></div><div></div><div></div></div>

ID: ab974dd3

Based on a random sample from a population, a researcher estimated that the mean value of a certain variable for the population is **20.5**, with an associated margin of error of **1**. Which of the following is the most appropriate conclusion?

- A. It is plausible that the actual mean value of the variable for the population is between **19.5** and **21.5**.
- B. It is not possible that the mean value of the variable for the population is less than **19.5** or greater than **21.5**.
- C. Every value of the variable in the population is between **19.5** and **21.5**.
- D. The mean value of the variable for the population is **20.5**.