

4.1 Bias

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The screenshot shows a statistics assignment interface. On the left, a list of 10 questions is displayed, each with a progress bar and status. Question 1 is highlighted. On the right, the details of Question 1 are shown, including the question text and five multiple-choice options. The assignment score is 98.5%.

1 of 12 Questions **Assignment Score: 98.5%**

Question 1 of 12

How much sleep do high school students get on a typical school night? A counselor designed a survey to find out. To make data collection easier, the counselor surveyed the first 100 students to arrive at school on a particular morning. These students reported an average of 7.2 hours of sleep on the previous night.

Is 7.2 hours probably greater than or less than the true average amount of sleep last night for all students at the school and why?

- ☒ The estimate of 7.2 hours is probably less than the true average because students who arrive first to school had to wake up earlier and may have gotten less sleep than those students who are able to sleep in.
- ☐ The estimate of 7.2 hours is probably more than the true average because most students will sleep when they get there.
- ☐ The estimate of 7.2 hours is probably more than the true average because students who arrive first to school must have gone to sleep earlier since they knew they had to get up earlier and may have gotten more sleep than those students who are able to sleep in.
- ☐ The estimate of 7.2 hours is probably less than the true average because students who arrive first to school are less likely to tell the truth about how much sleep they got the previous night.
- ☐ The estimate of 7.2 hours is probably the same as the true average because it all balances out in the end.

Solved