

2002 MC #8 Homework Problem Tuesday 04/07

8. A test engineer wants to estimate the mean gas mileage μ (in miles per gallon) for a particular model of automobile. Eleven of these cars are subjected to a road test, and the gas mileage is computed for each car. A dotplot of the 11 gas-mileage values is roughly symmetrical and has no outliers. The mean and standard deviation of these values are 25.5 and 3.01, respectively. Assuming that these 11 automobiles can be considered a simple random sample of cars of this model, which of the following is a correct statement?

- (A) A 95% confidence interval for μ is $25.5 \pm 2.228 \times \frac{3.01}{\sqrt{11}}$.
- (B) A 95% confidence interval for μ is $25.5 \pm 2.201 \times \frac{3.01}{\sqrt{11}}$.
- (C) A 95% confidence interval for μ is $25.5 \pm 2.228 \times \frac{3.01}{\sqrt{10}}$.
- (D) A 95% confidence interval for μ is $25.5 \pm 2.201 \times \frac{3.01}{\sqrt{10}}$.
- (E) The results cannot be trusted; the sample is too small.