Answer on Question #84606 – Math – Statistics and Probability

Question

We measure the speeds of a sample of cars on some highway. We would like to conduct a hypothesis test to determine whether there is evidence that the true mean speed is greater than 100 km/h. The mean speed of the drivers in our sample is calculated to be 103 km/h. The P-value of the appropriate hypothesis test is calculated to be 0.20. What is the interpretation of this P-value?

A) If the true mean speed of drivers were 100 km/h, the probability of incorrectly rejecting the null hypothesis would be 0.20.

B) If the true mean speed of drivers were greater than 100 km/h, the probability of observing a sample mean at least as high as 103 km/h would be 0.20.

C) If the true mean speed of drivers were greater than 100 km/h, the probability of correctly rejecting the null hypothesis would be 0.20.

D) If the true mean speed of drivers were 100 km/h, the probability of observing a sample mean at least as high as 103 km/h would be 0.20.

Solution

The interpretation of this P-value is as follows.

D) If the true mean speed of drivers were 100 km/h, the probability of observing a sample mean at least as high as 103 km/h would be 0.20.

Answer: D).