

## Answer to Question #92347 – Math – Statistics and Probability

### Question

The length of time for long-distance telephone calls from japan to africa has a mean of 16 minutes and a standard deviation of 4 minutes. Suppose a sample of 35 telephone calls is used to reflect on the population of all long-distance calls. Calculate the chance that the average of the 35 telephone calls is between 17 and 18 minutes.

### Solution

$$\begin{aligned} P(17 < \bar{X} < 18) &= P\left(\frac{17 - 16}{\frac{4}{\sqrt{35}}} < Z < \frac{18 - 16}{\frac{4}{\sqrt{35}}}\right) = \\ &= P(1.48 < Z < 2.96) = P(Z < 2.96) - P(Z < 1.48) = 0.0679. \end{aligned}$$

**Answer:** 0.0679.