# Answer on Question #53729 – Math – Statistics and Probability

## Question

Assume we want to estimate the mean cost of computer repairs for the population of consumers. How many consumers randomly selected for the survey if we want to be 95% confident that the sample mean is within $2 of the population mean (margin of error $e = 2, \alpha = 0.05, \sigma = 12, z_{\alpha/2} = 1.96$)?

## Solution

We have: $e = \frac{z_{\alpha/2}}{\sqrt{n}} \cdot \sigma$. Letting $e = 2, \sigma = 12, z_{\alpha/2} = 1.96$ we obtain the next equation:

$$\frac{1.96}{\sqrt{n}} \cdot 12 = 2 \Rightarrow n \approx 139.$$

**Answer:** 139.