

**Answer on question #53372, Math / Statistics and Probability**

**Question** A population has a mean of 500 and a standard deviation of 50. A sample of 40 will be taken and the sample mean  $\bar{x}$  will be used to estimate the population mean. Assume that the population is infinite. What is the standard deviation of  $\bar{x}$ ?

**Solution** Deviation of sample is related to deviation of population as

$$\bar{\sigma} = \frac{\sigma}{\sqrt{n}} = \frac{50}{\sqrt{40}} \approx 7.9$$

Hence, answer is b.7.91