

## Answer on Question #65163 – Math – Statistics and Probability

### Question

The mean concentration of cadmium in 6 contaminated soil samples was found to be 0.875 with a standard deviation of 0.134. If it is desired to know the mean with a precision of 2% (RSD), how many additional samples must be taken?

### Solution

$$ME = z_{crit} \frac{s}{\sqrt{n}} \rightarrow n = \left( \frac{z_{crit} s}{ME} \right)^2 = \left( \frac{1.96 * 0.134}{0.02} \right)^2 = 173.$$

Number of additional samples is

$$n = 173 - 6 = 167.$$

**Answer:** 167.

### Reference:

[1] Clay, K. (2017, February 9). How to determine sample size, determining sample size. Retrieved February 9, 2017, from <https://www.isixsigma.com/tools-templates/sampling-data/how-determine-sample-size-determining-sample-size/>