

### Answer on Question #49500 – Math – Statistics and Probability

The height of students in a certain BCOM class is normally distributed with mean and standard deviation .A random sample of 100 students was taken and the 90% confidence interval for was found to be between 175cm and 180cm.

Estimate the

(i) value of the sample mean

#### Solution

The confidence interval for a mean is given by the formula:

$$CI = (\bar{x} - E; \bar{x} + E),$$

where  $\bar{x}$  is the sample mean and  $E$  is the margin of error.

Thus, the sample mean is

$$\bar{x} = \frac{(\bar{x} - E) + (\bar{x} + E)}{2} = \frac{175\text{cm} + 180\text{cm}}{2} = 177.5\text{cm}.$$

**Answer: 177.5cm.**