

Answer on Question #42183-Math-Statistics and Probability

Which of the following confidence levels leads to the smallest margin of error?

90% 95% 97% 98% 99%

Solution

The margin of error (ME)

$$ME = \text{Critical value} \cdot \text{Standard error}.$$

The maximal Critical value $Z_{\alpha/2}$, where $\alpha = 1 - (\text{confidence level}/100)$.

The smallest Critical value is for 90% confidence level $Z_{0.05} = 1.645$, so the smallest margin of error is also for 90% confidence level.

Answer: 90%.