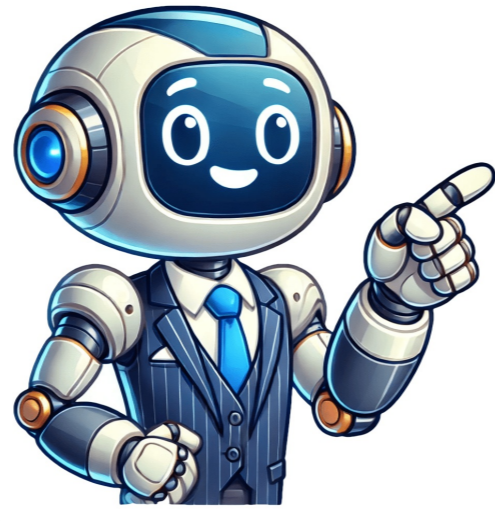


I'm not robot



The Estimating Measurement Uncertainty Calculator Bundle is designed for use with Microsoft Excel, helping labs meet ISO 17025 requirements and providing simple, accurate measurement uncertainty estimates. **Key Features:** - Designed for new and accredited labs - Includes downloadable resources and support - Provides professional-looking certificates and automatic computations - Compatible with Office 2010 and forward Given text: a 100m race in a school event. The race was timed using five different stopwatches and each stopwatch recorded slightly different timing. The readings are 15.33 seconds, 15.21 seconds, 15.31 seconds, 15.25 seconds and 15.35 seconds. Calculate the uncertainty of the timing based on the given information and present the timing with 68% confidence level. Solution: Mean is calculated as: Now, we need to calculate the deviations of each reading Similarly, calculate for all the readings Calculate the square of the deviations of each reading Uncertainty is calculated using the formula given below
$$\text{Uncertainty (u)} = \sqrt{\frac{\sum (x_i - \mu)^2}{n * (n-1)}}$$
 Uncertainty = 0.03 seconds 68% of values fall within 1 standard deviation of the mean (-1s