



Princess Sumaya جامعة
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PHYSICS LAB

(20147)

Experiment No. 1

Introduction to Errors and Graphs

Name: Reg.No. ()

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Date / / 20

Mark ()

Introduction to errors and Graphs

1. Objectives:

2. Questions:

1. Assume that the true value of the speed of sound in air is 348.5 m/s. The speed of sound is measured experimentally, the following results are obtained in m/s.

357.4, 332.6, 349.2, 322.6, 347.6, 345.8. Calculate:

a) The mean value of the experimental results for the speed of sound.

b) The standard deviation.

c) The random error in the mean value of the speed of sound.

d) The percentage error.

2. The radius of a sphere is measured experimentally, the following results are obtained in mm.

4.36, 4.94, 4.05, 4.25.

Calculate:

a) The average radius of the sphere.

b) The random error in the average of the radius.

c) The average volume of the sphere.

3. A student performed an experiment to find the density of a specific oil, and obtained two values $\rho_1 = 874 \text{ kg/m}^3$, $\rho_2 = 885 \text{ kg/m}^3$

Find the percentage difference in his results.
