



## Scientific initiation set, measurements, uncertainties, functions, multimeter, photoelectric sensor

EQ275BJM

### Function

Intended for experimental study, physics, chemistry laboratory for carrying out experiments on: Metrology. Significant figures and uncertainty. What does it mean to measure. The measurement. The graduated ruler. Significant figures. Measurement errors. The gross mistake. The systematic error. The accidental error. Detour. Calculation of percentage relative error. Comparing different volume measurement scales. The volumetric flask. How to calculate percent relative error. Measuring volumes in flasks with dif. A circle area. The area of  $\pi r^2$  the base circle. The perimeter of the base circle. The lateral surface area of  $2\pi r h$  the right circular cylinder. The total area of  $\pi r^2 + 2\pi r h$  the right circular cylinder. The meridian section of the cylinder. Relationship between mass and weight, graph, function and local  $g$  value. The force weight, the value of the weight of a body is proportional to the value of its mass. The SI unit of measure for force and the unit of measure for mass. Table and graph. Determining the gravitational acceleration at the experiment site. The angular coefficient and its physical meaning. Considering the trend line of the graph points and the function presented by the spreadsheet. Dynamics. The coil spring and Hookes law. The mathematical ratio of applied force to elongation. Association of helical springs in series. Determination of spring constant of helical springs in series. Association of helical springs in parallel. Determination of spring constant of helical springs in parallel. Dynamic determination of spring constant of a helical spring, mass oscillator and spring.

Observing the amplitude and frequency. Newtons second law combined with Hookes law. The equation for the period of oscillation of the system, etc.

## **Knowledge areas**

Physics

## **Level**

Graduation - Technical education

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