

Experimental part (Mechanics)

There are given two cylindrical bodies (having identical external shapes and from the same material), two measuring rules, one graduated and other un-graduated, and a vessel with water.

It is known that one of the bodies is homogenous and the other has an internal cavity with the following characteristics:

- the cavity is cylindrical
- has the axis parallel with the axis of the body
- its length is practically equal with that of the body

Determine experimentally and justify theoretically:

- a) The density of the material the two bodies consist of.
- b) The radius of the internal cavity.
- c) The distance between the axis of the cavity and the axis of the cylinder.
- d) Indicate the sources of errors and appreciate which of them influences more the final results.

Write all the variants you have found.