Problem 3.

Inside a thin-walled metal sphere with radius R=20 cm there is a metal ball with the radius $r = 10$ cm which has a common centre with the sphere. The ball is connected with a very long wire to the Earth via an opening in the sphere (Fig. 3). A charge $Q = 10^{-8}$ C is placed onto the outside sphere. Calculate the potential of this sphere, electrical capacity of the obtained system of conducting bodies and draw out an equivalent electric scheme.

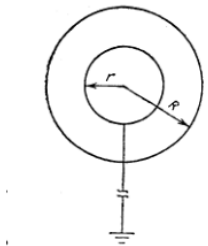


Fig. 3