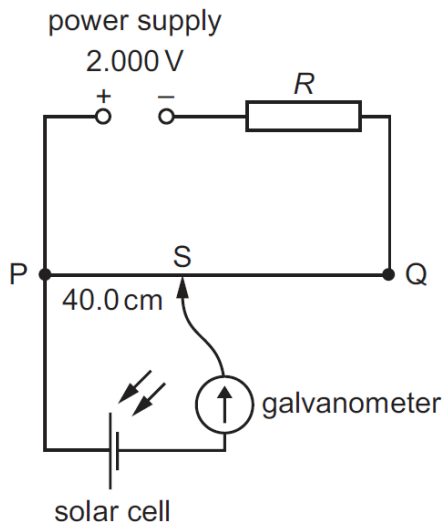


- 22** A power supply and a solar cell are compared using the potentiometer circuit shown.



The potentiometer wire PQ is 100.0 cm long and has a resistance of $5.00\ \Omega$. The power supply has an e.m.f. of 2.000 V and the solar cell has an e.m.f. of 5.00 mV.

When the galvanometer shows zero deflection, the balance length PS is found to be 40.0 cm.

What is the resistance of R so that the galvanometer reads zero at this balance length?

- A** $395\ \Omega$ **B** $795\ \Omega$ **C** $995\ \Omega$ **D** $1055\ \Omega$

[Turn over