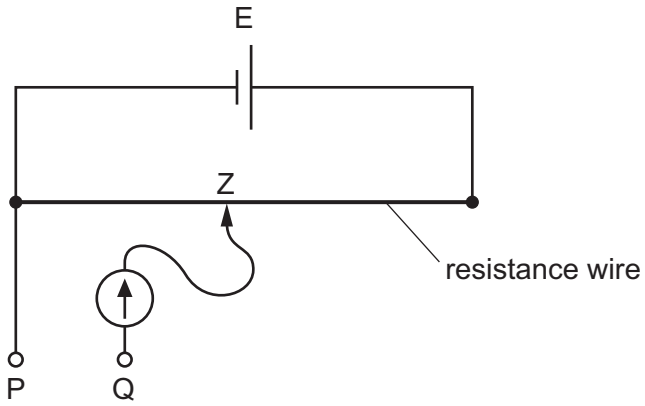
37 A cell E, of electromotive force (e.m.f.) 2 V and negligible internal resistance, is connected to a uniform resistance wire of resistance 10 Ω and length 1.0 m.



Z is a connection that may be made at any position along the resistance wire. A galvanometer is connected between Z and a point Q.

A new source of e.m.f. of approximately 8 mV is connected between points P and Q. The e.m.f. of the new source is determined by changing the position of Z until the reading on the galvanometer is zero.

Which change to the circuit allows a much more precise value for the e.m.f. of the new source to be obtained?

A Add a resistor of resistance 0.1 Ω in series with cell E.

B Add a resistor of resistance 1000 Ω in series with cell E.

C Add a resistor of resistance 10 Ω in series with the new source.

D Add a resistor of resistance 800 Ω in series with the new source.