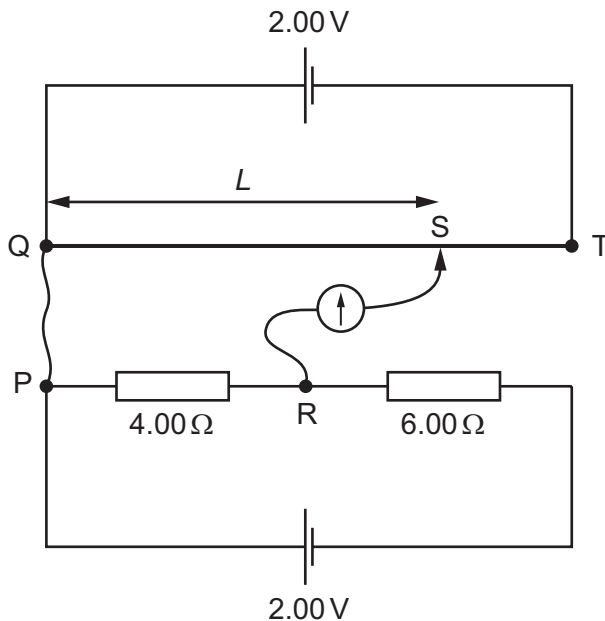


- 36** A 100 cm potentiometer wire QT is connected in series with a 2.00 V cell. Another circuit, consisting of a 2.00 V cell in series with resistors of resistance $4.00\ \Omega$ and $6.00\ \Omega$, is set up alongside the potentiometer. Connections PQ and RS are then made so that the potential difference (p.d.) across the $4.00\ \Omega$ resistor is balanced against the p.d. across a length L of potentiometer wire. Both cells have negligible internal resistance.



What is the balance length L ?

- A** 0 cm **B** 40 cm **C** 60 cm **D** 100 cm

- 37** Two identical batteries each have e.m.f. 6.0 V and internal resistance r . The batteries are