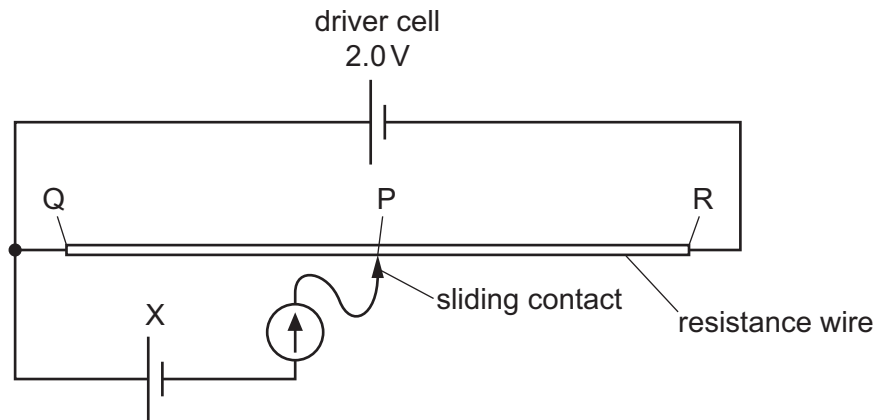**37** A potentiometer circuit is used to investigate the electromotive force (e.m.f.) of a cell X.

The e.m.f. of cell X is known to be approximately 0.50 V.

The driver cell has negligible internal resistance and an e.m.f. of 2.0 V. The sliding contact is moved along the uniform resistance wire between ends Q and R to a point P where the reading on the galvanometer is zero.

What is an expression for the approximate length QP?

A $\dfrac{QR}{4}$ **B** $\dfrac{QR}{3}$ **C** $\dfrac{2QR}{3}$ **D** $\dfrac{3QR}{4}$