34 A copper wire of length 2 m has a circular cross-section. There is a constant current in the wire when it is connected to a mobile phone in order to charge the battery.

The wire has a fault. A 1 m length of the wire has half the diameter of the other 1 m length.

The power dissipated in the thicker length of wire is *P*.

What is the power dissipated in the thinner length of wire?

A $\frac{1}{4}P$ **B** $\frac{1}{2}P$ **C** $2P$ **D** $4P$