

- 20** A length of metal wire with a circular cross-section is connected into an electric circuit. The wire carries a constant electric current.



Part of the wire has a diameter that increases uniformly with distance along the wire.

The drift velocity v of the charge carriers is related by a constant K to the diameter d of the wire.

Which equation for v is correct?

A $v = \frac{K}{d^2}$

B $v = \frac{K}{d}$

C $v = Kd$

D $v = Kd^2$

- 21** Two resistors, R and S , are connected in series to a 2.0 V battery with negligible internal resistance.