

**32** The current  $I$  in a wire is given by the equation

$$I = nAvq$$

where  $n$  is the number density of the free electrons,  $A$  is the cross-sectional area of the wire,  $v$  is the average drift velocity of the free electrons and  $q$  is the charge of an electron.

Which relationship is **not** used in the derivation of this equation?

- A** charge = current  $\times$  time
- B** distance = speed  $\times$  time
- C** number = number density  $\times$  area
- D** volume = length  $\times$  area