

- 32** A wire of diameter  $d$  is connected into an electric circuit. There is a current  $I$  in the wire and the charge carriers have an average drift speed  $v$ .

The wire is replaced with a new wire of the same material but with a diameter  $0.5d$ .

The current is adjusted so that the charge carriers in the new wire have an average drift speed  $3v$ .

What is the current in the new wire?

- A**  $0.75I$                       **B**  $1.5I$                       **C**  $6I$                       **D**  $12I$