

32 A cylindrical wire has cross-sectional area A and number density of free electrons n .
The wire has current I and the free electrons have average drift speed v .

A second cylindrical wire has cross-sectional area $0.5A$ and number density of free electrons $2n$.
In this wire, the free electrons have average drift speed $2v$.

What is the current in the second wire?

A $0.5I$

B I

C $2I$

D $4I$