

- 33** When a potential difference V is applied between the ends of a wire of diameter d and length l , the current in the wire is I .

What is the current when a potential difference of $2V$ is applied between the ends of a wire of the same material of diameter $2d$ and the length $2l$? Assume that the temperature of the wire remains constant.

A I

B $2I$

C $4I$

D $8I$