

**30** The current  $I$  in a metal wire is given by the expression shown.

$$I = Anvq$$

What does the symbol  $n$  represent?

- A** the number of atoms per unit volume of the metal
- B** the number of free electrons per atom in the metal
- C** the number of free electrons per unit volume of the metal
- D** the total number of electrons per unit volume of the metal

**31** The circuit diagrams show two lamps X and Y each connected to a cell. The current in lamp X is