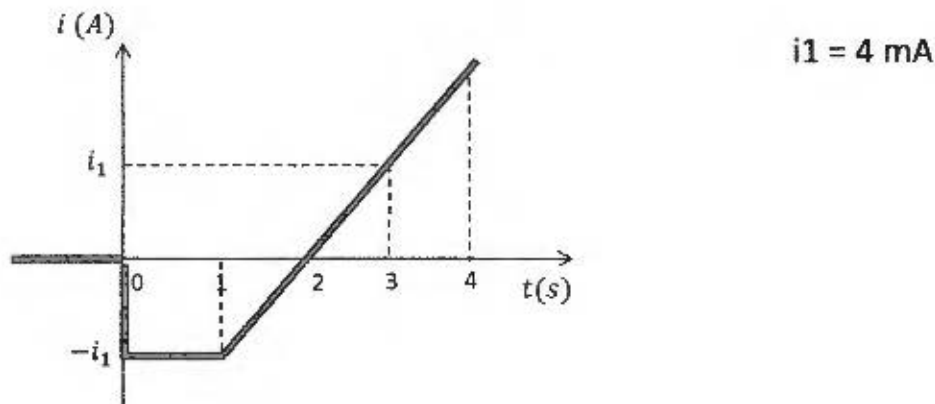


The curve shows the current flowing through a circuit element. Find the net charge  $q$  that has entered the element from  $t = 0$  s to  $t = 4$  s.



$$\begin{aligned}
 q &= \int_0^4 i(t) dt = \left( -i_1 \cdot 1 \right) + \left( -\frac{i_1 \cdot 1}{2} \right) \\
 &\quad + \left( \frac{i_1 \cdot 1}{2} \right) + \left( i_1 \cdot 1 + \frac{i_1 \cdot 1}{2} \right) \\
 &= \frac{-i_1}{2} \\
 &= \frac{4 \cdot 10^{-3}}{2}
 \end{aligned}$$

$$q = 0.002 \text{ C}$$