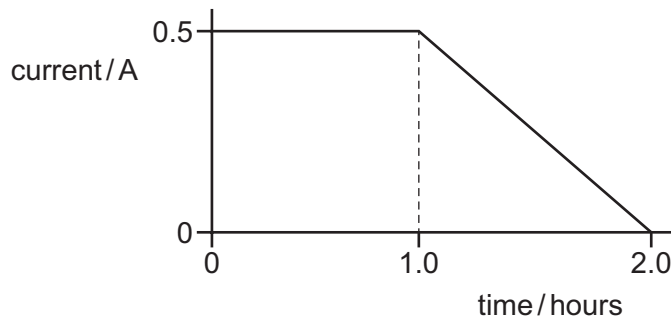


- 33** A mobile phone battery is charged by connecting it to a constant potential difference of  $5.0\text{ V}$ . After a time of  $1.0\text{ hour}$ , the initial current of  $0.50\text{ A}$  slowly decreases to zero, as shown.



What is the best estimate of the energy transferred to the battery during the time of  $2.0\text{ hours}$  shown in the graph?

- A**  $2700\text{ J}$       **B**  $9000\text{ J}$       **C**  $14\,000\text{ J}$       **D**  $18\,000\text{ J}$