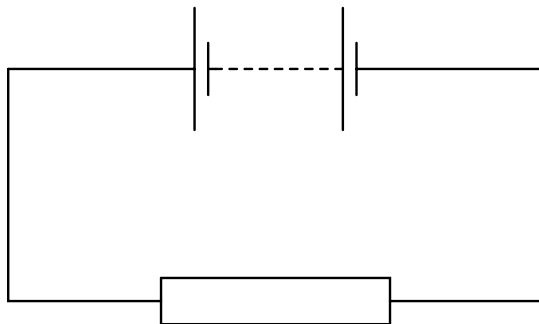


- 31** In the circuit below, the battery converts an amount  $E$  of chemical energy to electrical energy when charge  $Q$  passes through the resistor in time  $t$ .



Which expressions give the e.m.f. of the battery and the current in the resistor?

	e.m.f.	current
<b>A</b>	$EQ$	$Q/t$
<b>B</b>	$EQ$	$Qt$
<b>C</b>	$E/Q$	$Q/t$
<b>D</b>	$E/Q$	$Qt$

- 32** The filament of a 240 V, 100 W electric lamp heats up from room temperature to its operating