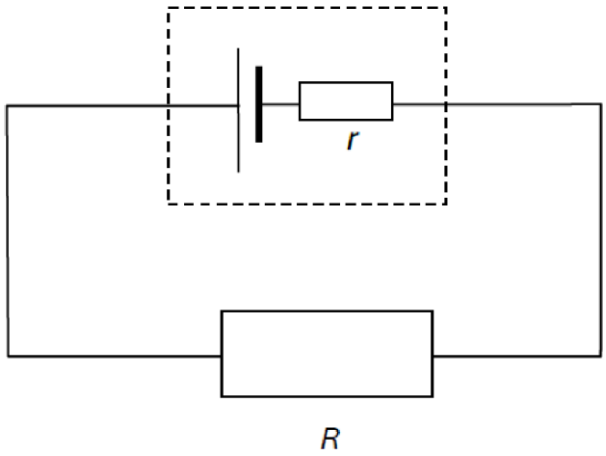
22 A battery with internal resistance *r* is connected to a resistor *R* as shown in the figure below. A constant current passes through *R*. When a charge of 20.0 C passes through the circuit, the heat dissipated in *r* is 10.0 J and the heat dissipated in *R* is 50.0 J.



What is the e.m.f. of the battery and the potential differences across *r* and *R*?

	e.m.f. of the battery	potential difference across r	potential difference across R
A	6.00 V	1.00 V	5.00 V
B	6.00 V	5.00 V	1.00 V
C	3.00 V	2.50 V	0.50 V
D	3.00 V	0.50 V	2.50 V