

1.4 Find the voltage drop across a light bulb if 0.05A current flowing through it for 4 seconds causes the light bulb to give off 240J of light and heat energy.

4 Given 0.05A, 4 sec      Coulomb = Amperes  $\times$  time  
240 J       $Q = 0.05A (4 \text{ sec}) = 0.2 \text{ C}$

$$V = \frac{W}{Q} = \frac{240}{0.2} = 120 \text{ V}$$