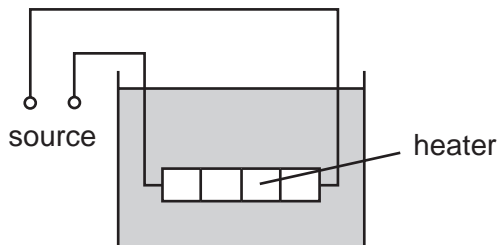


**34** The diagram shows a low-voltage circuit for heating the water in a fish tank.



The heater has a resistance of  $3.0\ \Omega$ . The voltage source has an e.m.f. of  $12\ \text{V}$  and an internal resistance of  $1.0\ \Omega$ .

At what rate does the voltage source supply energy to the heater?

**A**  $27\ \text{W}$

**B**  $36\ \text{W}$

**C**  $48\ \text{W}$

**D**  $64\ \text{W}$

**35** The diagram shows an arrangement of resistors