

- 13** To cool down the electrical generator of a nuclear power plant, cold water enters the heat exchanger of the generator at 3 °C and leaves at 11 °C. The rate of heat removed by the water is  $4.0 \times 10^{11}$  J per hour. The specific heat capacity of water is  $4200 \text{ J kg}^{-1} \text{ K}^{-1}$ .

What is the rate of water flow?

A  $\frac{4.0 \times 10^{11}}{4200 \times 8 \times 60 \times 60} \text{ kg s}^{-1}$

B  $\frac{4.0 \times 10^{11} \times 60 \times 60}{4200 \times 8} \text{ kg s}^{-1}$

C  $\frac{4.0 \times 10^{11}}{4200 \times 8 \times 60} \text{ kg s}^{-1}$

D  $\frac{4.0 \times 10^{11} \times 60}{4200 \times 8} \text{ kg s}^{-1}$