

- 12** Cooling water enters the heat exchanger in the turbine hall of a nuclear power station at 6.0 °C and leaves at 14.0 °C. The rate of heat removal by the water is 6.7×10^9 J per minute.

The specific heat capacity of water is $4200 \text{ J kg}^{-1}\text{K}^{-1}$.

What is the rate of water flow?

A $\frac{6.7 \times 10^9 \times 60}{4200 \times 8} \text{ kg s}^{-1}$

B $\frac{6.7 \times 10^9}{4200 \times 8 \times 60} \text{ kg s}^{-1}$

C $\frac{4200 \times 8}{6.7 \times 10^9 \times 60} \text{ kg s}^{-1}$

D $\frac{4200 \times 8 \times 60}{6.7 \times 10^9} \text{ kg s}^{-1}$