

- 18** A car travels at a constant speed of  $25 \text{ m s}^{-1}$  up a slope. The wheels driven by the engine exert a forward force of  $3000 \text{ N}$ . The total force due to air resistance and friction is  $2100 \text{ N}$ . The weight of the car has a component down the slope of  $900 \text{ N}$ .

What is the rate at which thermal energy is dissipated?

- A** zero                      **B**  $2.3 \times 10^4 \text{ W}$                       **C**  $5.3 \times 10^4 \text{ W}$                       **D**  $7.5 \times 10^4 \text{ W}$