

**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**  $7.5 \times 10^4\text{ W}$