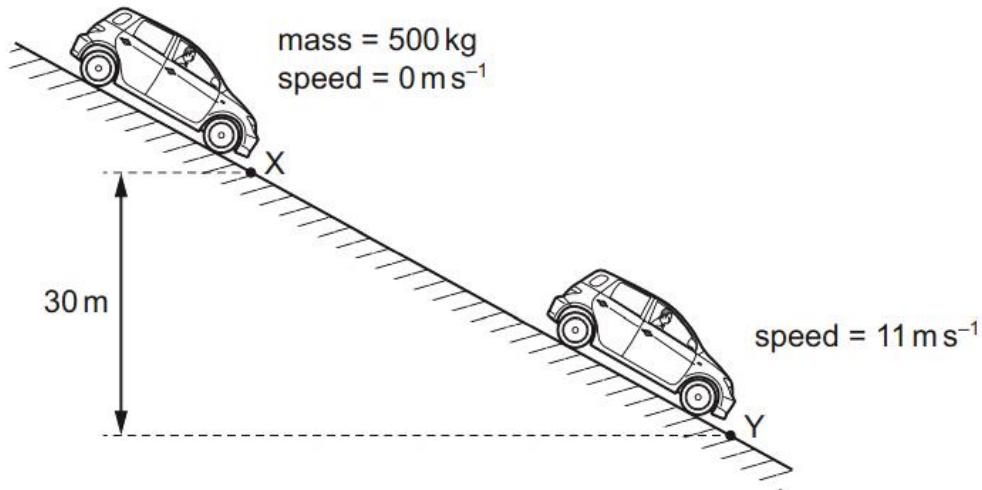


11

A car of mass 500 kg is at rest at point X on a slope, as shown.

The car's brakes are released and the car rolls down the slope with its engine switched off. At point Y, the car has moved through a vertical height of 30 m and has a speed of 11 m s^{-1} .



What is the energy dissipated by frictional forces when the car moves from X to Y?

A

$$3.0 \times 10^4 \text{ J}$$

B

$$1.2 \times 10^5 \text{ J}$$

C

$$1.5 \times 10^5 \text{ J}$$

D

$$1.8 \times 10^5 \text{ J}$$