

PQ 10

- 1) A force of 260N is used to push a box of 15kg for a distance of 3.7m along a horizontal surface. Calculate the work done. (hint: $E_w =$)
- 2) A car of mass 600kg is travelling at 80 m s^{-1} . Calculate its kinetic energy. (hint: $E_k =$)
- 3) A runner of 75kg is at a height of 2,2m. Calculate their potential energy. (hint: $E_p =$)
- 4) A lift can carry 12 people of an average mass of 85kg each through a height of 20m in 15s. Calculate the minimum power output of the lift motor. (hint: work done = PE gained)
- 5) An object is moved through a distance of 3,5m by applying a force of 96N. Calculate the work done. (hint $E_w =$)
- 6) A bus of mass 12.5 tonnes is travelling at 32 m s^{-1} . Calculate its kinetic energy. (hint: $E_k =$)
- 7) A car of mass 1.4 tonnes is travelling at 24 m s^{-1} . The driver applies the brakes and the speed reduces to 8.0 m s^{-1} . Calculate the loss in the cars kinetic energy. (hint: initial E_k and final E_k)
- 8) An object falls to the ground from a height of 15m. Calculate its speed just before it lands.
- 9) A device can do 8.4J of useful work in 2 minutes. Calculate its output in watts. (hint: $P = E/t$)
- 10) A van of 2.5 tonnes mass is travelling at 50 km h^{-1} . Calculate its kinetic energy. ($E_k =$)