

5.1 Review Questions

1. How much work is done on a 10.0 kg mass by Earth's gravitational field when the mass drops a distance of 5.0 m?
2. A girl uses a 3.0 m long ramp to push her 110 kg motorbike up to a trailer. The floor of the trailer is 1.2 m above the ground. How much work is done on the motorbike?
3. The force of gravity on a box of apples is 98.0 N. How much work will you do
 - (a) if you lift the box from the floor to a height of 1.2 m?
 - (b) if you carry the box horizontally a distance of 2.0 m?
4. A hiker carries a 25 kg load up a hill at a steady speed through a vertical height of 350 m. How much work does she do on the load?

9. A motor does 25 MJ (megajoules) of work in one hour.

(a) What is the power rating of the motor?

(b) How many horsepower is this motor, if
1 HP = 750 W?

10. How much energy is consumed by a 100.0 W light bulb, if it is left on for 12.0 h?

11. An appliance that consumes electrical energy at the rate of 1500 J/s, accomplishes 1200 J/s of useful work. How efficient is the appliance?