

2 (a) (i) Define *power*.

..... [1]

(ii) your definition in (i) to show that power may also be expressed as the product of force and velocity.

[2]

(b) A lorry moves up a road that is inclined at 9.0° to the horizontal, as shown in Fig. 2.1.

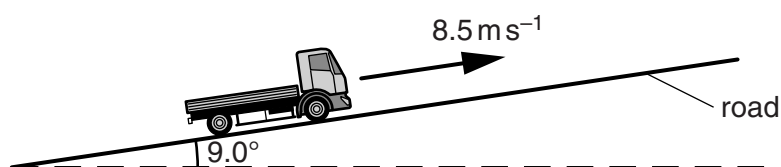


Fig. 2.1

The lorry has mass 2500 kg and is travelling at a constant speed of 8.5 m s^{-1} . The force due to air resistance is negligible.

(i) Calculate the useful power from the engine to move the lorry up the road.

power = kW [3]

(ii) State two reasons why the rate of change of potential energy of the lorry is equal to the power calculated in (i).

1.

.....

2.

.....

[2]