

Section A

Answer **all** the questions in the spaces provided.

- 1 (a) Derive the equation $E_p = mgh$ for the potential energy change, E_p , of a mass m moved through a vertical distance h near the Earth's surface.

[2]

- (b) Fig. 1.1 shows the variation with velocity v of the force F applied to an object. F and v are in the same direction.

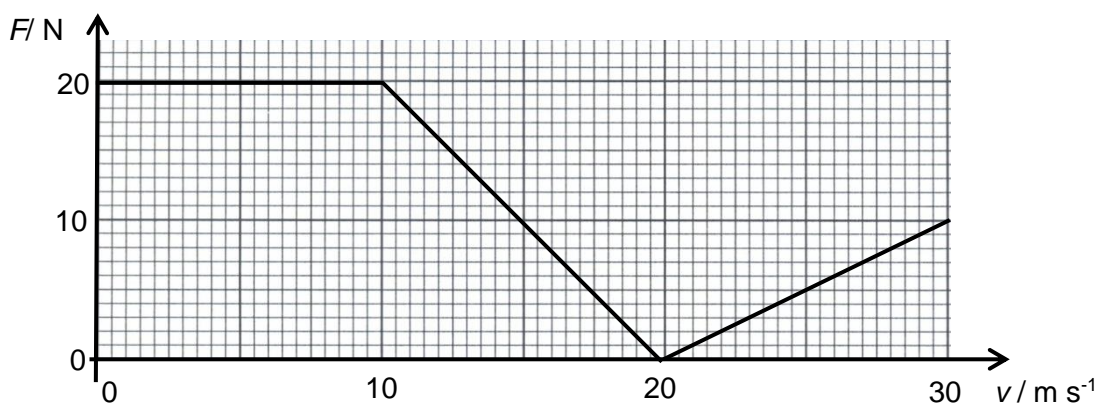


Fig. 1.1

On Fig. 1.2, draw a graph showing the variation with v of the rate of work done.

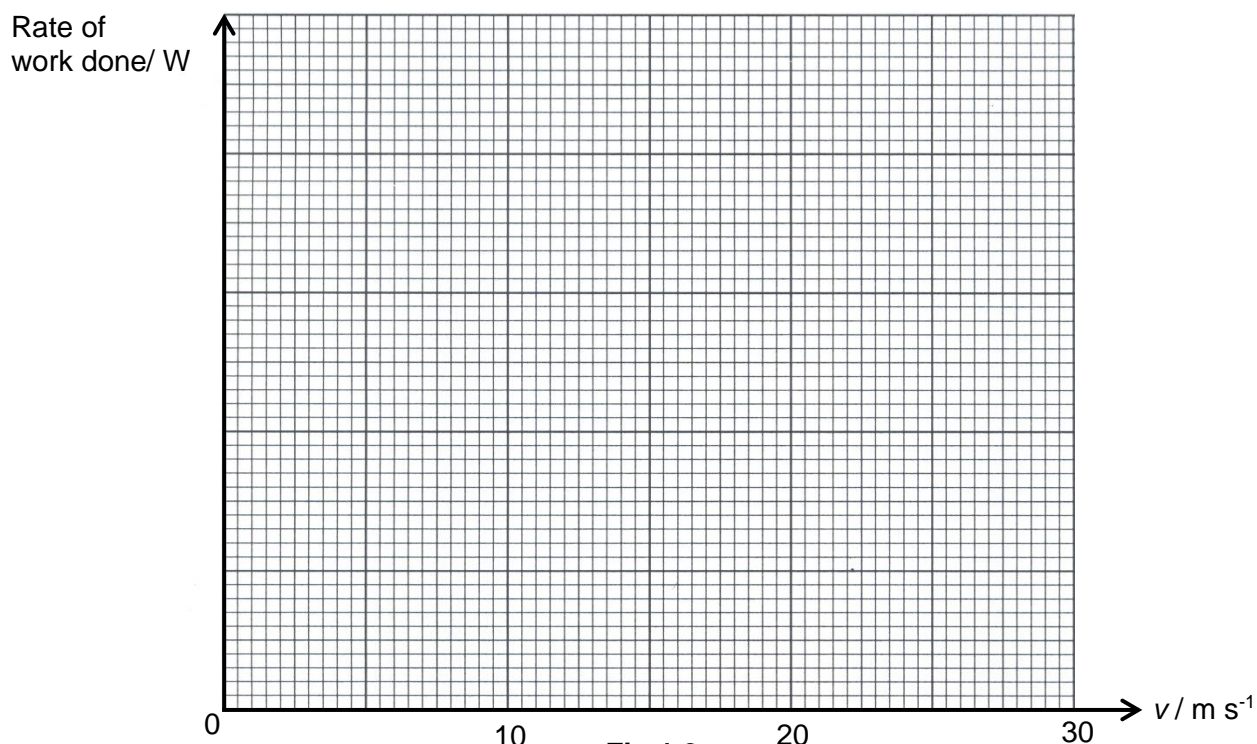


Fig. 1.2

[3]

[Total: 5]