

- 4 A block is pulled on a horizontal surface by a force P as shown in Fig. 4.1.

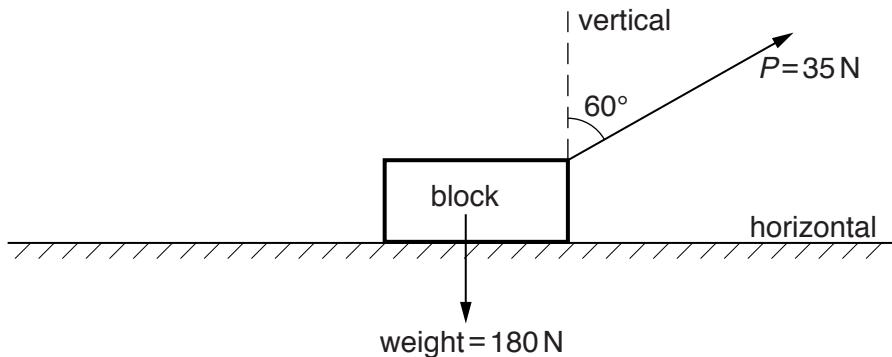


Fig. 4.1

The weight of the block is 180 N . The force P is 35 N at 60° to the vertical.
The block moves a distance of 20 m at constant velocity.

(a) Calculate

(i) the vertical force that the surface applies to the block (normal reaction force),

$$\text{force} = \dots \text{N} [2]$$

(ii) the work done by force P .

$$\text{work done} = \dots \text{J} [2]$$

- (b) (i) Explain why the block continues to move at constant velocity although work is done on the block by force P .

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[1]

- (ii) Explain, in terms of the forces acting, why the block remains in equilibrium.

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[2]