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

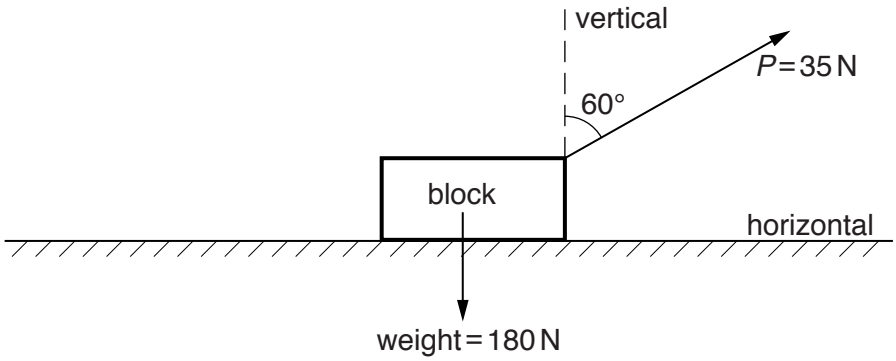


**Fig. 4.1**

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),

force = ..... N [2]

**(ii)** the work done by force *P*.

work done = .....J [2]

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

.....

.....

.....[1]

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

.....

.....

.....

.....[2]