2 (a) The kilogram, metre and second are all SI base units.

State two other SI base units.

1. ....

2. ....

[2]

(b) A uniform beam AB of length 6.0 m is placed on a horizontal surface and then tilted at an angle of 31° to the horizontal, as shown in Fig. 2.1.
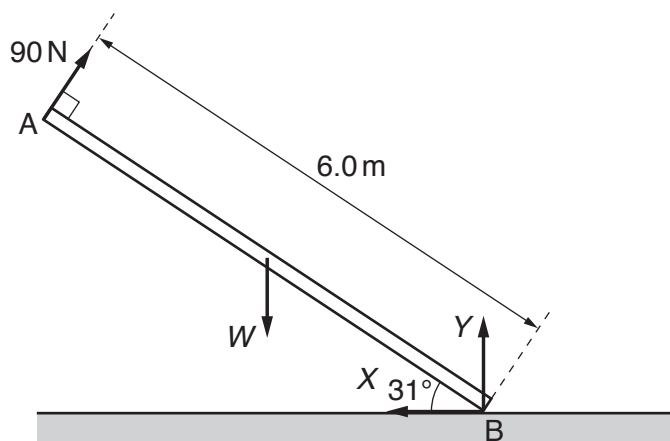

Fig. 2.1 (not to scale)

The beam is held in equilibrium by four forces that all act in the same plane. A force of 90 N acts perpendicular to the beam at end A. The weight W of the beam acts at its centre of gravity. A vertical force Y and a horizontal force X both act at end B of the beam.

(i) State the name of force X.

....[1]

(ii) By taking moments about end B, calculate the weight W of the beam.

$W =$ .... N [2]

(iii) Determine the magnitude of force X.

magnitude of force $X =$ .... N [1]

[Total: 6]