

2 (a) State the two conditions that must be satisfied for a body to be in equilibrium.

1.
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2.
.....

[2]

(b) Three co-planar forces act on a body that is in equilibrium.

(i) Describe how to draw a vector triangle to represent these forces.

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.....[3]

(ii) State how the triangle confirms that the forces are in equilibrium.

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.....[1]

(c) A weight of 7.0 N hangs vertically by two strings AB and AC, as shown in Fig. 2.1.

For
Examiner's
Use

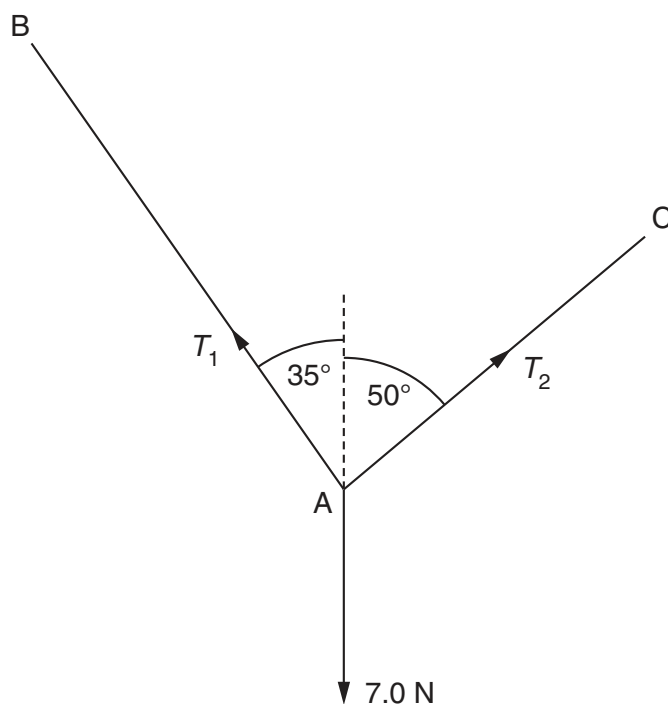


Fig. 2.1

For the weight to be in equilibrium, the tension in string AB is T_1 and in string AC it is T_2 .

On Fig. 2.1, draw a vector triangle to determine the magnitudes of T_1 and T_2 .

$T_1 = \dots\dots\dots \text{ N}$

$T_2 = \dots\dots\dots \text{ N}$

[3]

(d) By reference to Fig. 2.1, suggest why the weight could not be supported with the strings AB and AC both horizontal.

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.....[2]