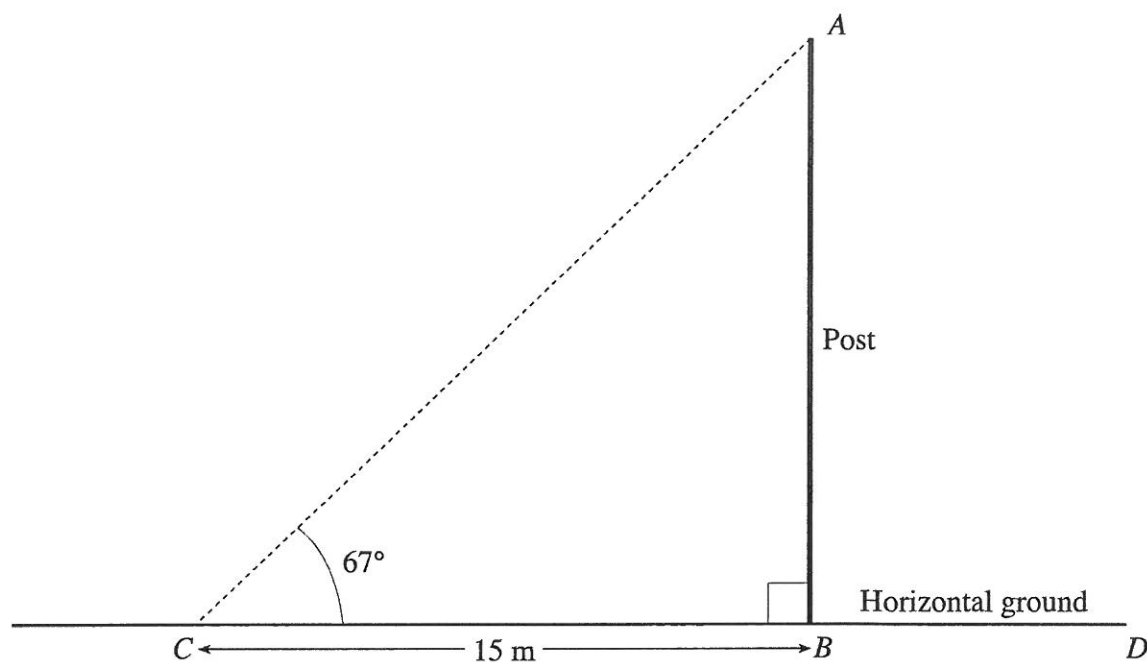


15. (a) A vertical post  $AB$  is 15 m from a point  $C$  on horizontal ground. The angle of elevation of the top of the post from the point  $C$  is  $67^\circ$ . Calculate the height of the post.



*Diagram not drawn to scale.*

[3]

- (b) A ladder, 21 m long, is placed against a vertical wall. The foot of the ladder is 13 m from the wall on horizontal ground. Calculate the angle which the ladder makes with the horizontal.

[3]

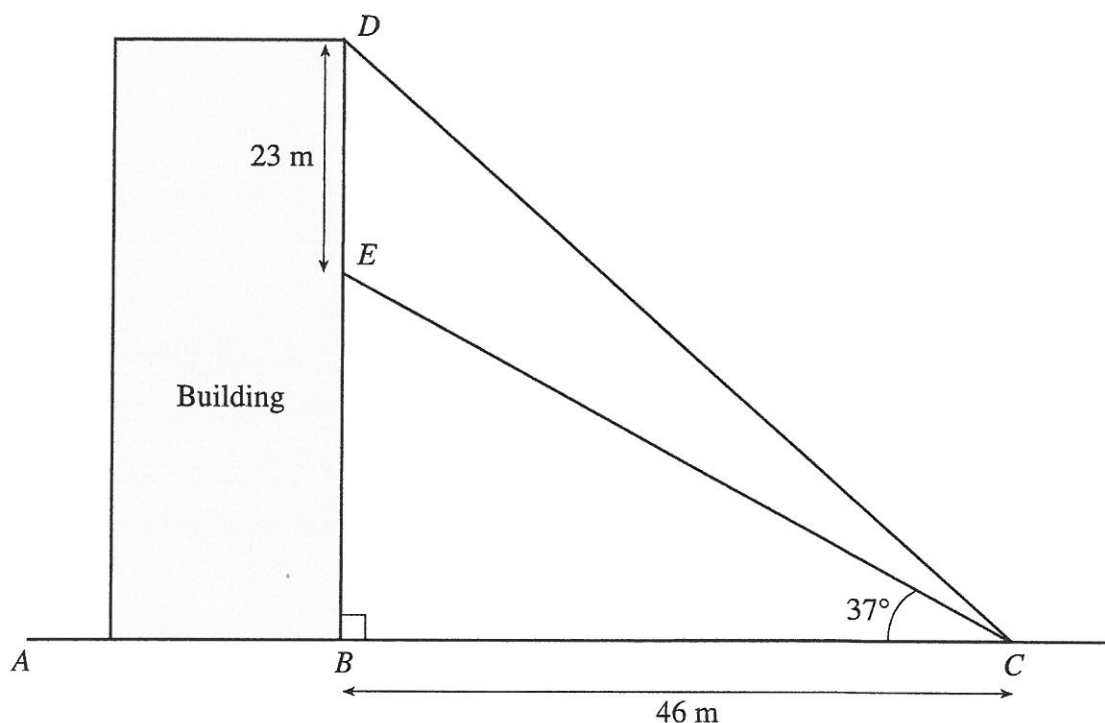
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- The diagram shows a large triangle  $AEC$  with a vertical line segment  $BD$  from vertex  $E$  to the base  $AC$ . Point  $D$  is on  $BD$ . Segment  $AD$  is labeled  $36\text{m}$ . The angle at vertex  $A$  is  $43^\circ$ . The angle at vertex  $C$  is  $54^\circ$ . The segment  $BC$  is labeled  $49\text{m}$ . A right-angle symbol is shown at point  $B$  on the base  $AC$ .

Calculate the length of  $DE$ .

This image shows a full page of white paper with horizontal dashed lines, typical of primary school writing paper. The lines are evenly spaced and run across the entire width of the page. There are no margins, text, or other markings present.

**Turn over.**

10. A building stands on the horizontal ground  $ABC$ . The point  $E$  is 23 metres below the top of the building along the vertical face,  $DEB$ . The point  $C$  is 46 m from the point  $B$ . The angle of elevation of the point  $E$  from the point  $C$  is  $37^\circ$ .



*Diagram not drawn to scale.*

- (a) Calculate the height of the building.

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[3]

- (b) Calculate the angle of elevation of the top of the building from the point  $C$ .

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[3]

13. (a) From a harbour a yacht sails 4.1 km North.  
It then sails 7.7 km East before dropping the anchor.  
Calculate the bearing of the yacht from the harbour.

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[5]