Trigonometry

Question Paper 7

Level	International A Level
Subject	Maths
Exam Board	CIE
Topic	Trigonometry
Sub Topic	
Booklet	Question Paper 7

Time Allowed: **17 minutes**

Score: **/14**

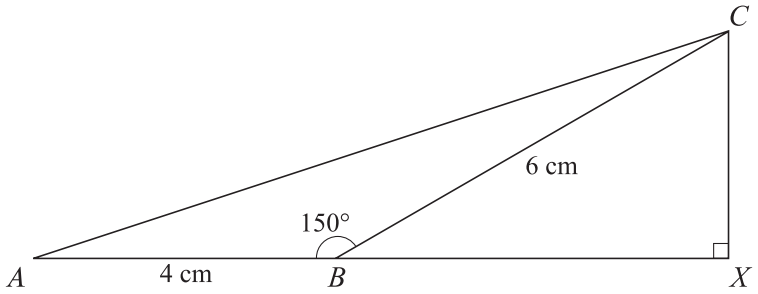
Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	'77.5%	70%	62.5%	57.5%	45%	<45%

1 In the triangle ABC, $AB = 12\,\text{cm}$, angle $BAC = 60°$ and angle $ACB = 45°$. Find the exact length of BC. [3]

6

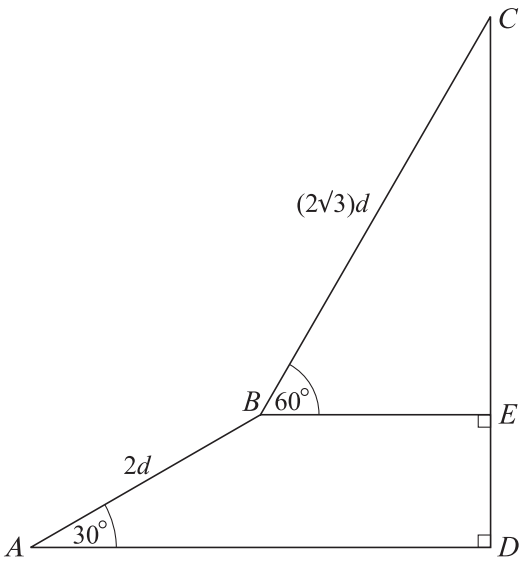


In the diagram, ABC is a triangle in which $AB = 4\,\text{cm}$, $BC = 6\,\text{cm}$ and angle $ABC = 150°$. The line CX is perpendicular to the line ABX.

(i) Find the exact length of BX and show that angle $CAB = \tan^{-1}\left(\frac{3}{4+3\sqrt{3}}\right)$. [4]

(ii) Show that the exact length of AC is $\sqrt{(52+24\sqrt{3})}\,\text{cm}$. [2]

3



In the diagram, $ABED$ is a trapezium with right angles at E and D, and CED is a straight line. The lengths of AB and BC are $2d$ and $(2\sqrt{3})d$ respectively, and angles BAD and CBE are 30° and 60° respectively.

(i) Find the length of CD in terms of d. [2]

(ii) Show that angle $CAD = \tan^{-1}\left(\frac{2}{\sqrt{3}}\right)$. [3]