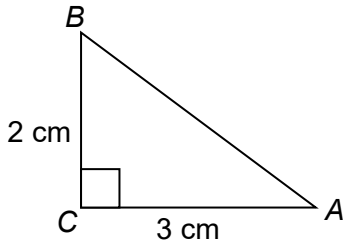
Topic Test 1 (20 minutes)

Pythagoras' Theorem and basic trigonometry - Higher

Section A

Calculator. 15 minutes.

1 What is the value of sin *A* for this triangle?



Not drawn accurately

Circle your answer.

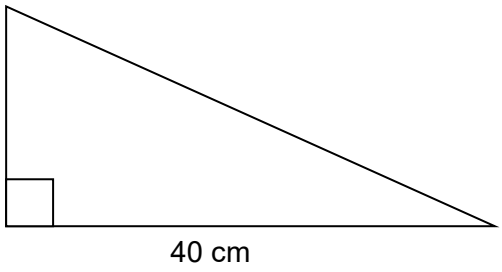
[1 mark]

$\frac{2}{3}$ $\frac{2}{5}$ $\frac{2}{\sqrt{13}}$ $\frac{3}{\sqrt{13}}$

2 The area of this triangle is 180 cm^2

Work out the length of the perimeter.
You **must** show your working.

[4 marks]



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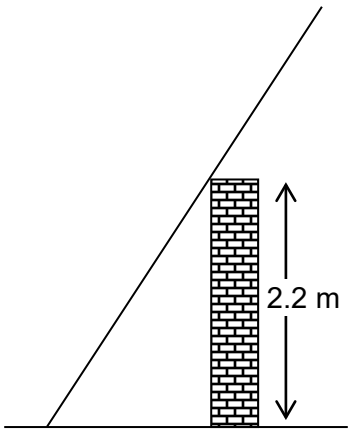
Answer _____

3 A ladder of length 5 metres leans against a wall that is 2.2 metres high.
The midpoint of the ladder is in contact with the top of the wall.
Safety guidelines state that for a wall 2.2 metres high the base of a ladder should be between 0.8 and 0.9 metres from the base of the wall.

Is the ladder safe?

[2 marks]



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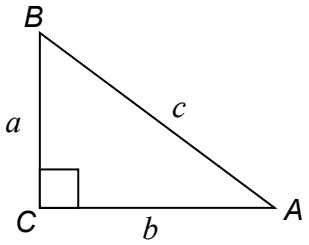
4 For this triangle, which of the following is **not** true?

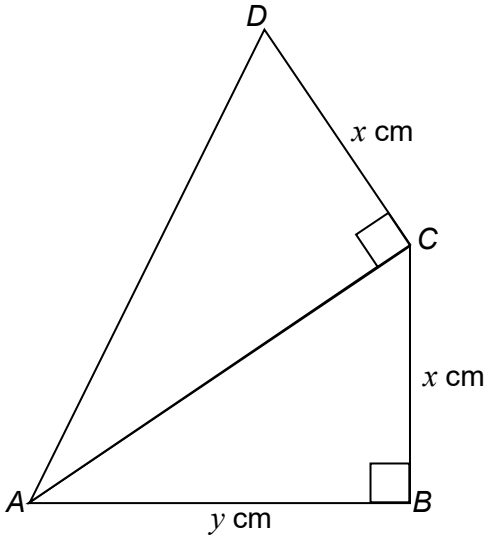


Circle your answer.

[1 mark]

$a = \sqrt{c^2 - b^2}$ sin C = 1 sin A = cos B tan A = $\frac{b}{a}$

5 *ABC* and *ACD* are right angled triangles.
BC = *CD* = x cm
AB = y cm



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5 (a) Work out an expression for *AD* in terms of x and y.

[3 marks]

Answer _____

5 (b) You are given that $\tan DAC = \frac{1}{3}$.

Show that angle *CAB* is approximately 19.5°

[4 marks]

Section B

Non-calculator. 5 minutes. Put your calculator away. You may work on part A but you must not use your calculator.

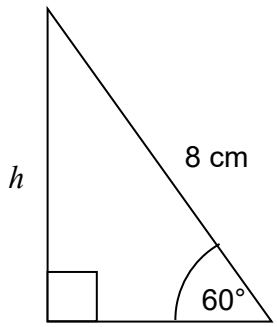
6 Which of the following is true?
Circle your answer.

[1 mark]

$\tan 30 = \frac{1}{\sqrt{3}}$ $\sin 45 = \frac{2}{\sqrt{2}}$ $\cos 60 = \frac{\sqrt{3}}{2}$ $\tan 60 = 2$

7 Work out the height, h, of this triangle.
Give your answer in surd form.

[2 marks]



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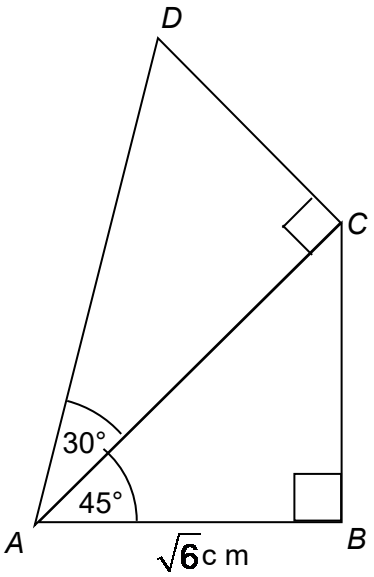
Answer _____ cm

8 *ABC* and *ACD* are two right-angled triangles.

Show that CD = 2 cm

[2 marks]



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Answer _____ cm