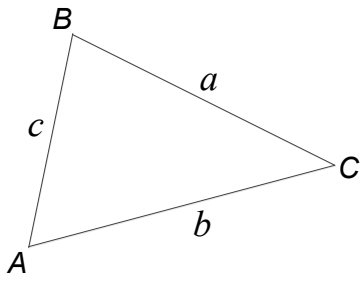
Topic Test 1 (20 minutes)

Sine and cosine rules - Higher

Use this diagram to answer questions 1 to 3.



1 Which one of these formulas is correct?
Circle your answer.

[1 mark]

$\frac{a}{\sin A} = \frac{\sin B}{b}$ $\quad ab = (\sin C)^2$

$\frac{a}{\sin A} = \frac{\sin C}{\sin B}$ $\quad \frac{a}{b} = \frac{\sin A}{\sin B}$

2 Which one of these formulas is correct?
Circle your answer.

[1 mark]

$a^2 = b^2 + c^2 + 2bc \cos A$ $\quad a^2 = b^2 + c^2 + 2ac \cos A$

$a^2 = b^2 + c^2 - 2bc \cos A$ $\quad a^2 = b^2 + c^2 - 2ac \cos A$

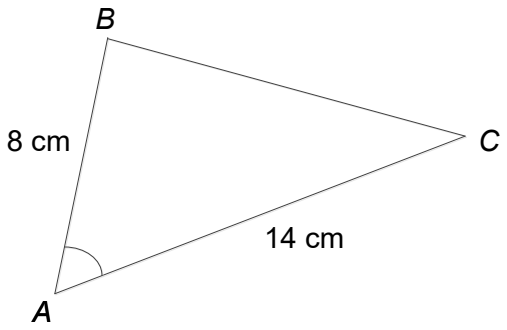
3 Which one of these gives the area of the triangle?
Circle your answer.

[1 mark]

$\frac{1}{2}bc \sin A$ $\quad \frac{1}{2}ac \sin A$

$\frac{1}{2}ab \sin A$ $\quad \frac{1}{2}abc \sin A$

4 The area of this triangle is 28 cm^2



Not drawn accurately

Work out the size of angle *A*.

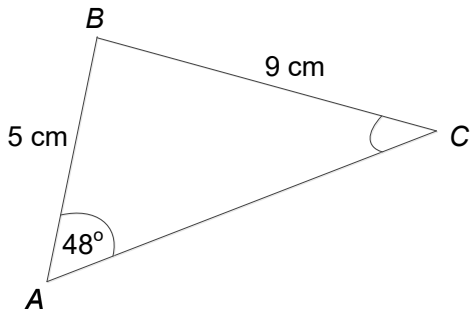
x

[2 marks]

Answer _____ degrees

5 Work out the size of angle *C*.

[3 marks]



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Answer _____ degrees

6 You are given that $\sin 60^\circ - \sin 45^\circ = \frac{1}{2}(\sqrt{a} - \sqrt{b})$

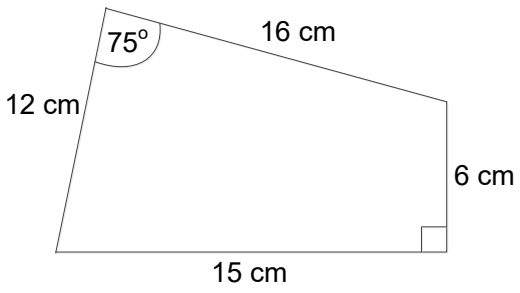
Work out the values of the integers a and b.

[4 marks]

$a =$ _____

$b =$ _____

7 Work out the area of this quadrilateral.



Not drawn accurately

[4 marks]

Answer _____ cm^2

8 Two soldiers *A* and *B* leave the same base.
Soldier *A* travels 5 km due North.
Soldier *B* travels 6 km due South-East.

How far apart are the soldiers?

[4 marks]

Answer _____ km