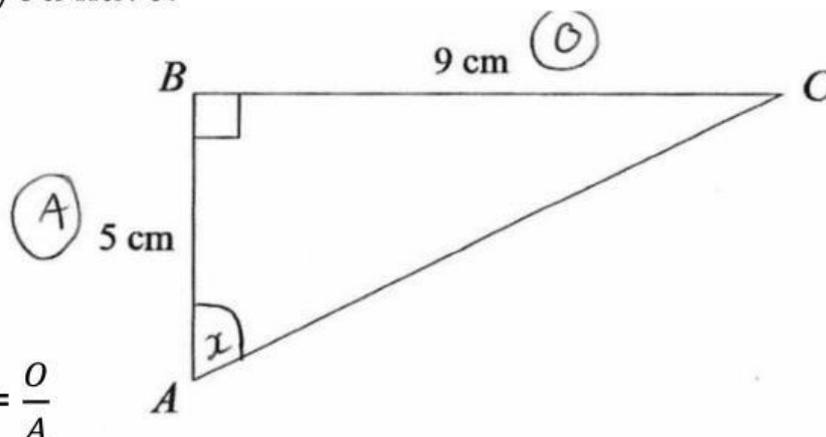


## Trigonometry with right-angled triangles: SOH CAH TOA

Notes:

- Sometimes questions may mention something like  $\angle PQR$ :
  - This just means the angle found between lines PQ and QR
  - Essentially the angle at point Q because it is the middle letter in the 3 letters.
- Remember that if your unknown is an angle which you need to find, then you use the inverse trig function:
  - Eg if you have:



$$\tan(x) = \frac{O}{A}$$

1. functions have inputs and outputs
2. tan is a function
3. the input is x, so that  $\tan(\text{input}) = \text{output}$
4. the output is  $\frac{O}{A}$
5. To inverse, simply swap the inputs and outputs,

$$\text{So } \tan(x) = \frac{O}{A} \rightarrow \tan^{-1}\left(\frac{O}{A}\right) = x,$$

hence  $\downarrow$

Calculate the size of angle BAC.

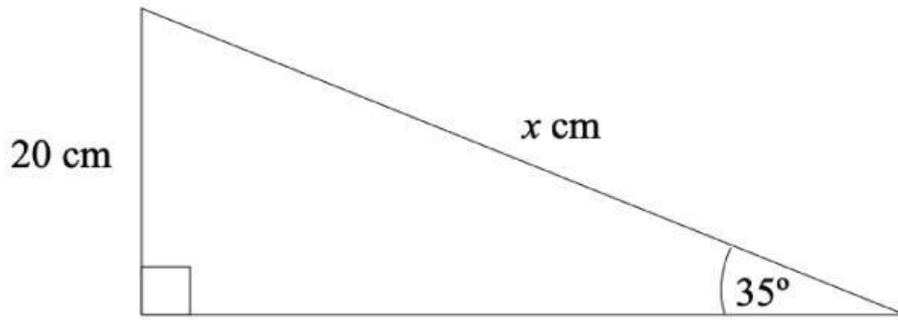
$$\tan x = \frac{9}{5}$$

$$x = \tan^{-1}\left(\frac{9}{5}\right)$$

$$= 60.9 \text{ (1dp)}$$



2.



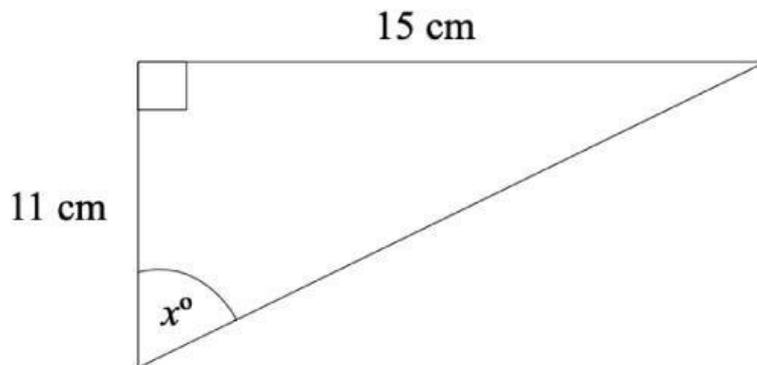
Work out the value of  $x$ .

(2 marks)

$x =$  \_\_\_\_\_ cm

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3.



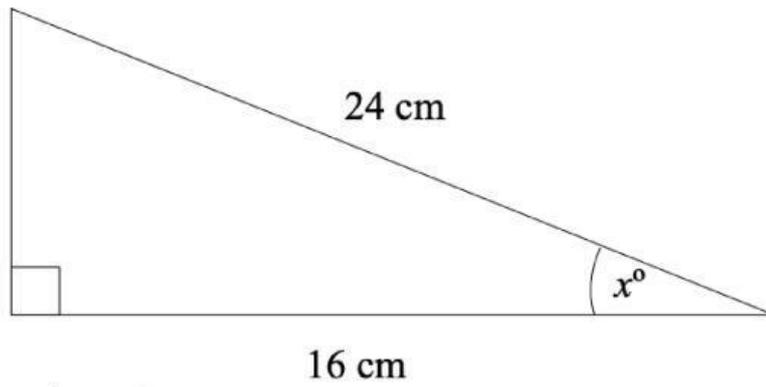
Work out the value of  $x$ .

(2 marks)

$x =$  \_\_\_\_\_ °

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4.



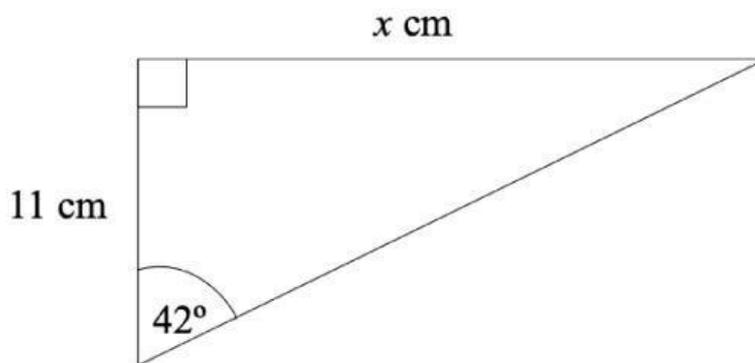
Work out the value of  $x$ .

(2 marks)

$x =$  \_\_\_\_\_  $^\circ$

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5.



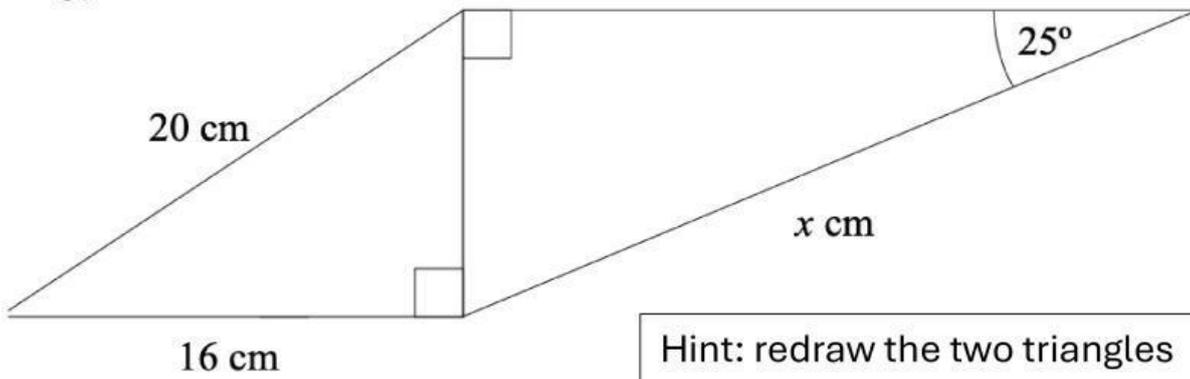
Work out the value of  $x$ .

(2 marks)

$x =$  \_\_\_\_\_ cm

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6.



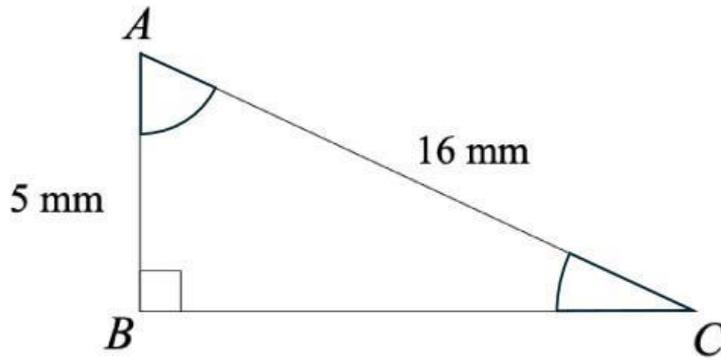
Hint: redraw the two triangles separately and note down the side that they both have in common

Work out the value of  $x$ .  
Give your answer to 1 decimal place.

**(4 marks)**

$x =$  \_\_\_\_\_ cm

7.



a) Identify where angle BAC is on the diagram, and drag and drop the following theta symbol into the correct corner of the triangle above:

$\theta$

b) Now find  $\angle BAC$ :

$\angle BAC = \underline{\hspace{2cm}}^\circ$