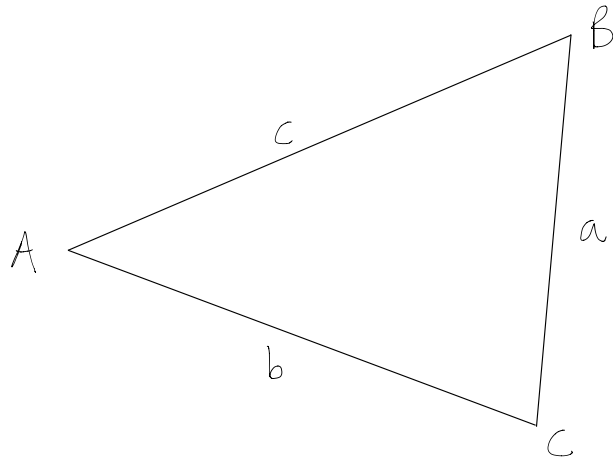


C2 - Chapter 2 - The sine and the cosine rule



* Sine rule: $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

* Cosine rule: $a^2 = b^2 + c^2 - 2bc \cos A$

Remember to always start with the side that is found opposite the angle of interest.

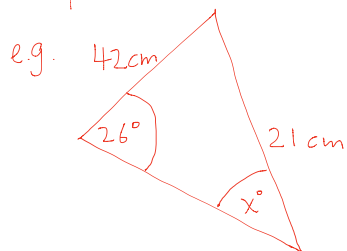
* Area of a triangle = $\frac{1}{2} ab \sin C$

Two sides and the included angle

* $\begin{matrix} S & O & C & T \\ H & H & A & A \end{matrix}$

SOH CAH TOA
Some Old Horses
Can Always Hide
Their Old Age

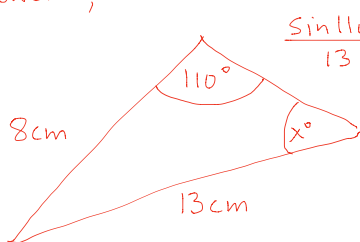
* When using the sine rule, bear in mind that $\sin(180-x) = \sin x$ so there may be two possible results for the angle you are trying to find



$$\frac{\sin 26}{21} = \frac{\sin x}{42} \Rightarrow x = 61.3^\circ \text{ or } x = 180 - 61.3 = 118.7^\circ$$

So, two possible values for x
This is because you can draw two different triangles with the given information

However,



$$\frac{\sin 110}{13} = \frac{\sin x}{8} \quad x = 35.3^\circ \text{ or } x = 180 - 35.3 = 144.7^\circ$$

Reject this as it leads to an angle sum which is greater than 180°!