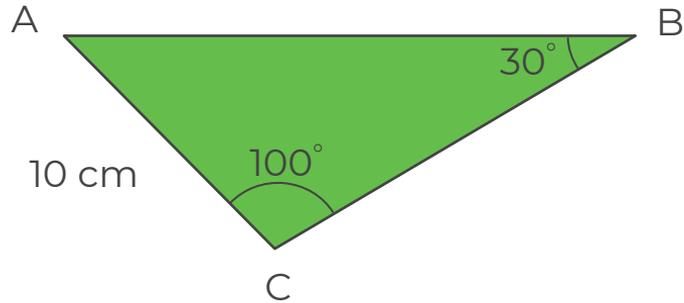


Use the sine rule to find a missing length

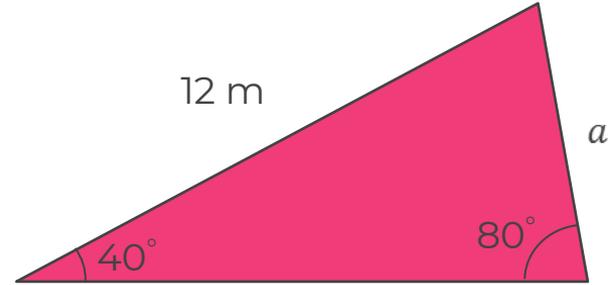


Use the sine rule to find a missing length

1. Find the length of side AB to one decimal place.

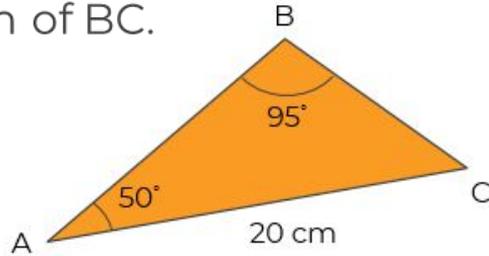


2. Find the length of the side labelled a to three significant figures.



Use the sine rule to find a missing length

3. Tamsin is trying to work out the length of BC.

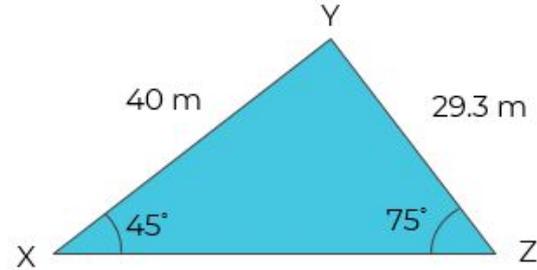


Here is her working out.

$$BC = \sin 50 \times \frac{\sin 95}{20}$$

What mistake has she made?

4. Below is a diagram of John's field.



John wants to put a fence on each side of the field. He has 105 metres of fencing. Does he have enough?

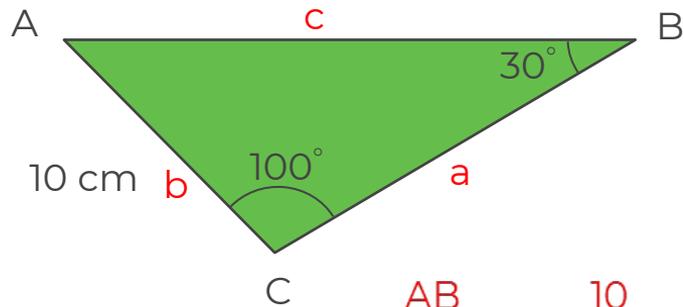


Answers



Use the sine rule to find a missing length

1. Find the length of side AB to one decimal place.

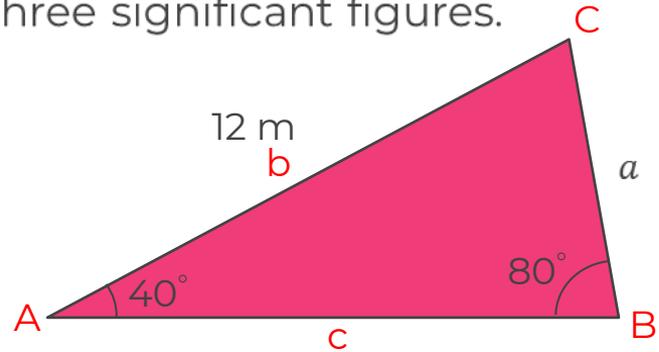


$$\frac{AB}{\sin(100)} = \frac{10}{\sin(30)}$$

$$AB = \frac{10}{\sin(30)} \times \sin(100)$$

$$AB = 19.7 \text{ cm}$$

2. Find the length of the side labelled a to three significant figures.



$$\frac{a}{\sin(40)} = \frac{12}{\sin(80)}$$

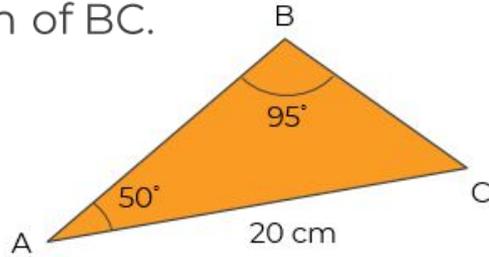
$$a = \frac{12}{\sin(80)} \times \sin(40)$$

$$a = 7.83 \text{ m}$$



Use the sine rule to find a missing length

3. Tamsin is trying to work out the length of BC.



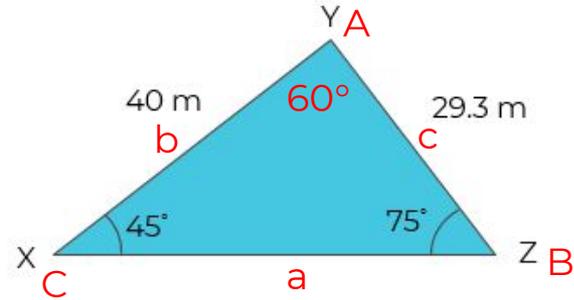
Here is her working out.

$$BC = \sin 50 \times \frac{\sin 95}{20}$$

What mistake has she made?

Written $\frac{\sin 95}{20}$ instead of $\frac{20}{\sin 95}$

4. Below is a diagram of John's field.



John wants to put a fence on each side of the field. He has 105 metres of fencing. Does he have enough?

$$\frac{40}{\sin(75)} \times \sin(60) = 35.863\dots \approx 105.1 \text{ needed.}$$

Not enough

