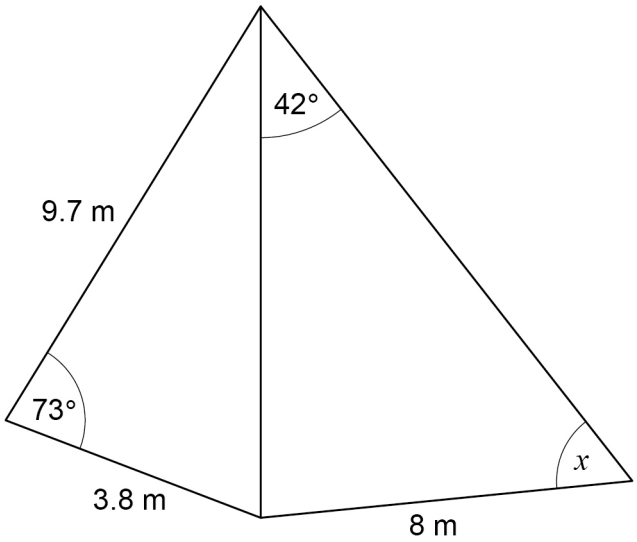
**1 (a)** Another sail is joined to the first sail as shown.




Not drawn accurately

$x$ is an acute angle.

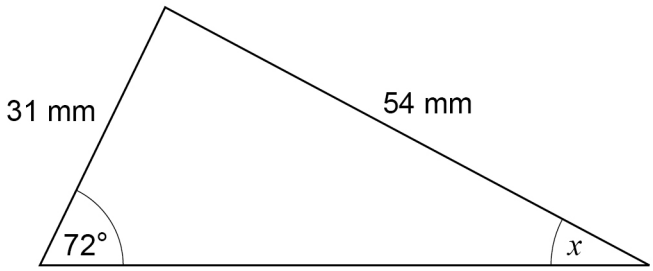
Work out the size of angle $x$.

**[5 marks]**

Answer _____ degrees

**2 (a)** Here is a different triangle.

Not drawn accurately




Leah tries to use the sine rule to work out the size of angle $x$.

Here are the first two lines of her working.

$$\frac{x}{\sin 31} = \frac{54}{\sin 72}$$

$$x = \frac{54 \sin 31}{\sin 72}$$

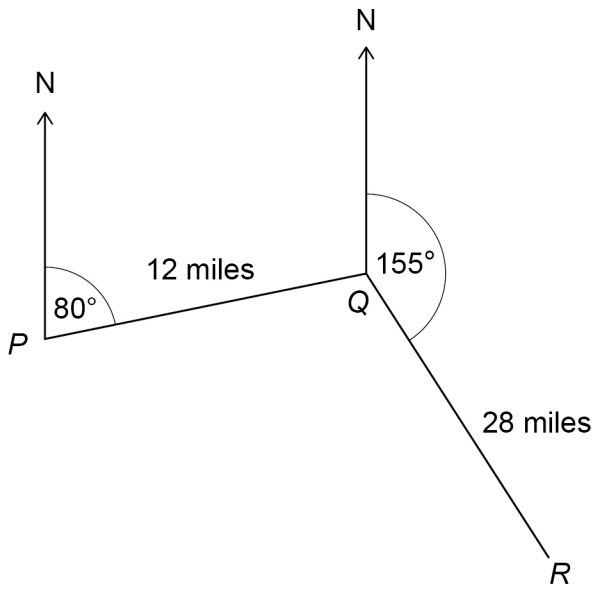
What error has she made in this working?

**[1 mark]**

**3** A ship sails from *P* to *Q* and then from *Q* to *R*.

*Q* is 12 miles from *P*, on a bearing of 080°

*R* is 28 miles from *Q*, on a bearing of 155°



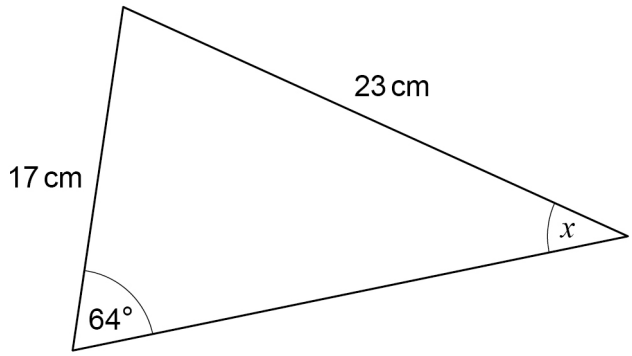

Not drawn accurately

Work out the direct distance from *P* to *R*.

**[4 marks]**

Answer _____ miles

**4**



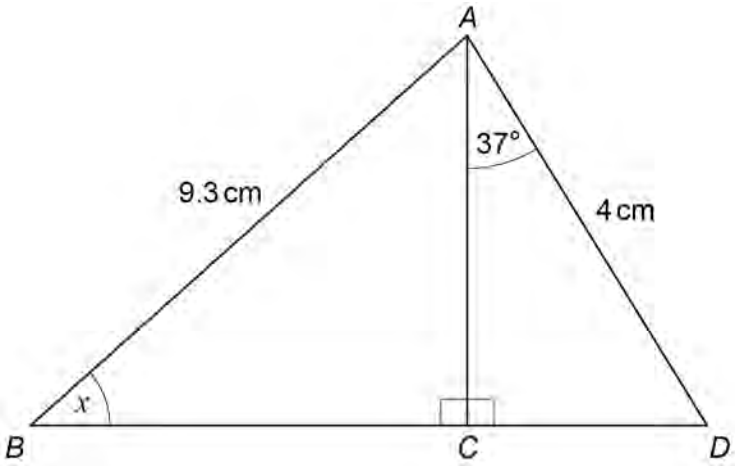

Not drawn accurately

Use the sine rule to work out the size of angle $x$.

**[3 marks]**

$x =$ _____ °

**5**



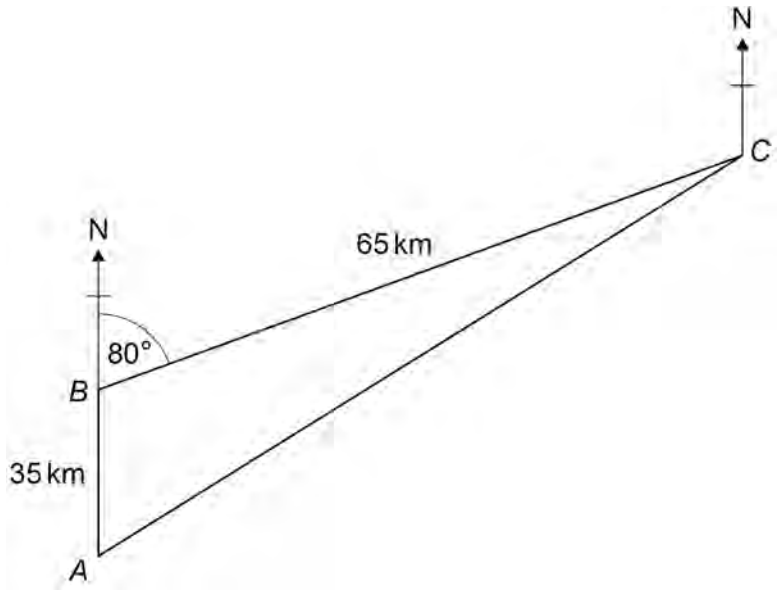

Not drawn accurately

Work out the size of angle $x$.

**[4 marks]**

$x =$ _____ °

**6**




Not drawn accurately

A boat sails 35 km North from *A* to *B*.

From *B* the boat sails to *C* and then back to *A*.

**6 (a)** Show that the distance the boat sails from *C* to *A* is 79 km to the nearest km

You **must** show your working.

**[2 marks]**

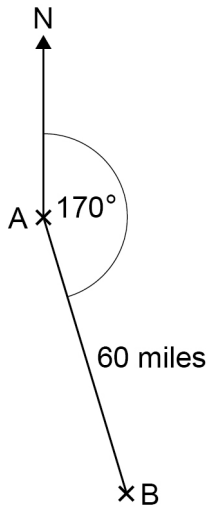
**6 (b)** Work out the bearing of *A* from *C*.

**[4 marks]**

Answer _____ °

**7** B is 60 miles from A on a bearing of 170°

Not drawn accurately




A ship sails from A on a bearing of 247°

It travels at a constant speed of 23 mph for $1\frac{1}{2}$ hours.

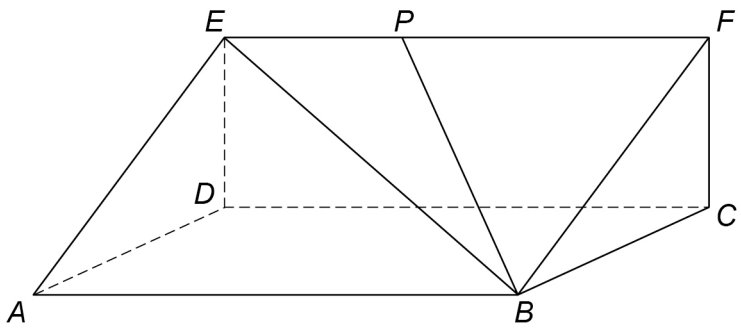
Is the ship now closer to B than it was when it left A?

You **must** show your working.

**[5 marks]**

**8** *ABCDEF* is a triangular prism.

*P* is a point on *EF*.




*EB* = 29 cm

Angle *EBP* = 35°

Angle *EPB* = 114°

Work out the length of *EP*.

**[2 marks]**

Answer _____ cm

**9** A diagonal of a rectangle is 23.7 cm long.

The diagonal makes an angle of 52° with a side of length $x$ cm

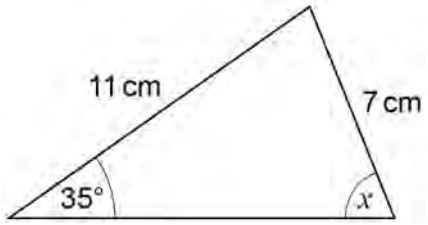
Work out the value of $x$.

**[3 marks]**

$x =$ _____

**10** Here is triangle A.

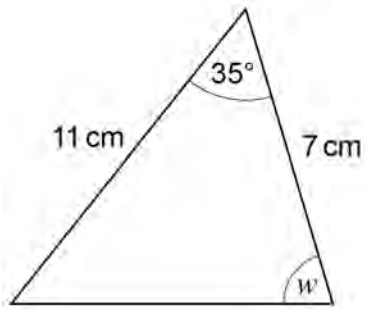
Not drawn accurately




**10 (a)** Use the sine rule to show that $x = 64°$ to the nearest degree.

**[3 marks]**

**10 (b)** Here is triangle B.




Not drawn accurately

Anna thinks that $w$ must be 64° to the nearest degree.

She says,

"This is because triangle B has two sides and one angle the same as triangle A."

**Without further calculation**, is she correct?

Tick a box.

Yes ☐ No ☐

Give a reason for your answer.

**[1 mark]**