1

The diagram shows triangle *ABC* in which *AB* = 16 cm, ∠*ABC* = 118° and ∠*ACB* = 26°.
Use the sine rule to find the length *AC* to 3 significant figures.

2
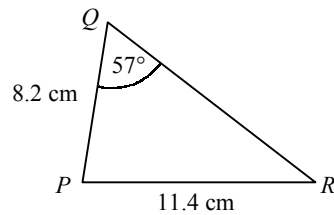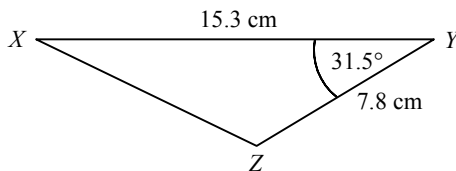

The diagram shows triangle *PQR* in which *PQ* = 8.2 cm, *PR* = 11.4 cm and ∠*PQR* = 57°.
Use the sine rule to find the size of ∠*PRQ* in degrees to 1 decimal place.

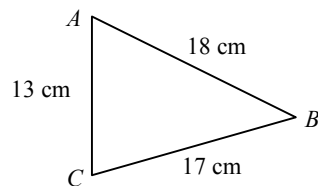**3** In triangle *ABC*, *AB* = 16.2 cm, *BC* = 12.3 cm and ∠*BAC* = 37°.
Find the two possible sizes of ∠*ACB* and the corresponding lengths of *AC*.

4

The diagram shows triangle *XYZ* in which *XY* = 15.3 cm, *YZ* = 7.8 cm and ∠*XYZ* = 31.5°.
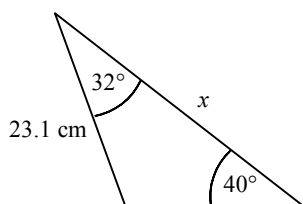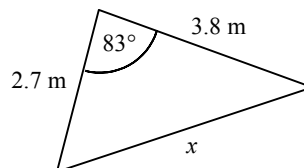Use the cosine rule to find the length *XZ*.

5

The diagram shows triangle *ABC* in which *AB* = 18 cm, *AC* = 13 cm and *BC* = 17 cm.
Use the cosine rule to find the size of ∠*ACB*.
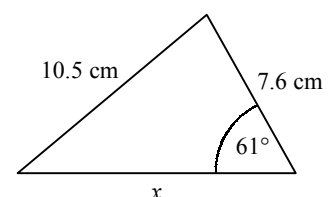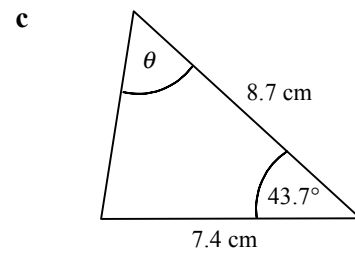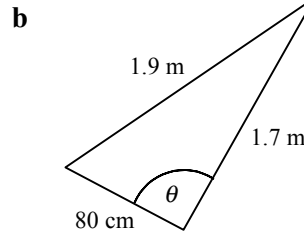
6 Find the length *x* in each triangle.

a **b** **c**

7   Find the angle θ in each triangle.

a   **b**   **c**

92 cm   1.9 m θ 8.7 cm

96.5° θ 1.7 m   43.7°

67 cm   80 cm θ 7.4 cm
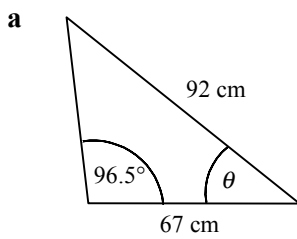
8   Find the area of each of the following triangles.

a   **b**   **c**   5.8 cm   72.4°

2.1 m   35 cm

66°   116°   6.5 cm

3.4 m   68 cm
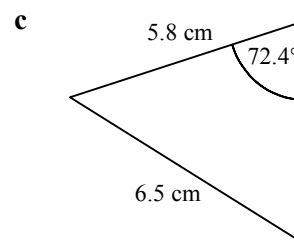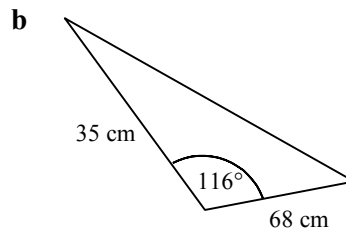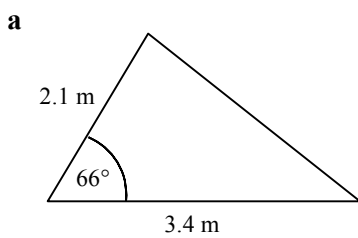
9   Joanne walks 4.2 miles on a bearing of 138°. She then walks 7.8 miles on a bearing of 251°.

   a   Calculate how far Joanne is from the point where she started.

   b   Find, as a bearing, the direction in which Joanne would have to walk in order to return to the point where she started.

10 A ferry and a cargo ship are both approaching the same port. The ferry is 3.2 km from the port on a bearing of 076° and the cargo ship is 6.9 km from the port on a bearing of 323°.

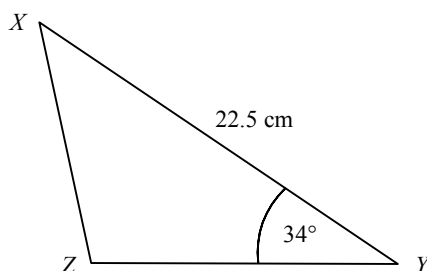   Find the distance between the two vessels and the bearing of the cargo ship from the ferry.

11

B

10.4 cm

A 9.7 cm

11.0 cm

C
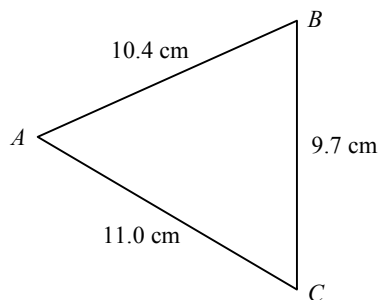
   The diagram shows triangle ABC in which $AB = 10.4$ cm, $AC = 11.0$ cm and $BC = 9.7$ cm.

   Find the area of the triangle to 3 significant figures.

12 X

22.5 cm

34°

Z Y

   The diagram shows triangle XYZ in which $XY = 22.5$ cm and $\angle XYZ = 34°$.

   Given that the area of the triangle is 100 cm^2, find the length XZ.