

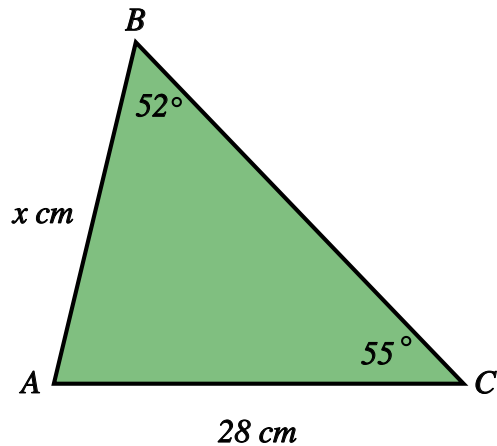
2. Sine and Cosine Rules

Name: _____ Class: _____ Date: _____

Mark / 20 %

1) Find x in the triangle below, giving your answer to 3 significant figures.

[1]



2) Given triangle ABC where $AB = 29 \text{ cm}$, $\angle B = 67^\circ$ and $\angle C = 45^\circ$. Find the length of the side AC , giving your answer to 3 significant figures.

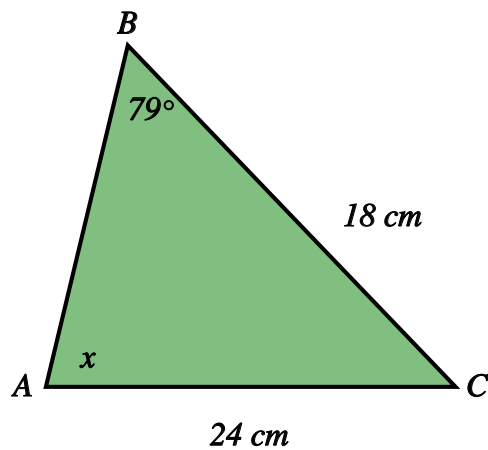
[1]

3) Town B is on a bearing of 116° from town A. Town C is on a bearing 204° from town B. Town C is due south and 23 km from town A. Find the distance of town B from town C. Give your answers to 3 significant figures.

[1]

4) Find x in the triangle below, giving your answer to 3 significant figures.

[1]

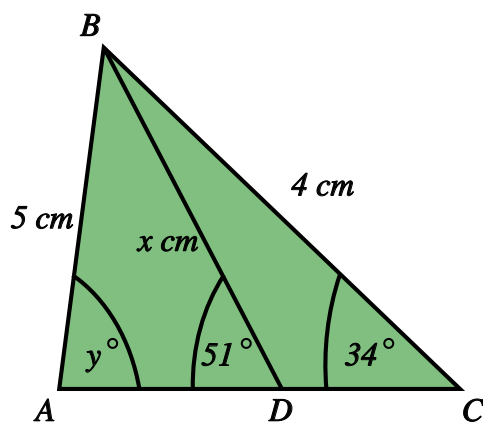


5) Given triangle ABC where $BC = 26\text{ cm}$, $AB = 25\text{ cm}$ and angle $ACB = 58^\circ$. Find the size of the angle ABC , giving your answer to 3 significant figures.

[1]

6) Find the values of x and y in the diagram below, giving your answers to 3 significant places.

[1]

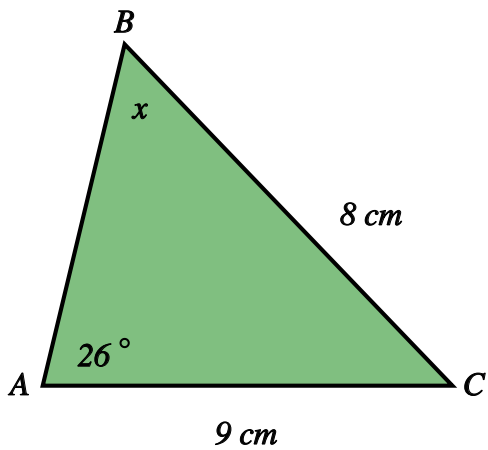


7) Towns B and C are on bearings of 032° and 110° respectively from town A. The distance between towns A and C is 10 km and the distance between towns B and C is 19 km. Find **a)** the bearing of C from B and **b)** the distance between towns A and B giving your answers to 3 significant figures.

[1]

8) Find the size of the two possible angles of x , giving your answer to 1 decimal place.

[1]

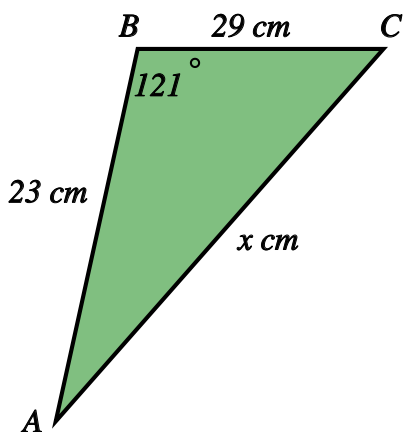


9) In the triangle LMN , $LN = 19\text{ cm}$, $MN = 11\text{ cm}$, angle $MLN = 33^\circ$ and $LMN = x$. Calculate the size of the two possible values of angle x giving your answer to 1 decimal place.

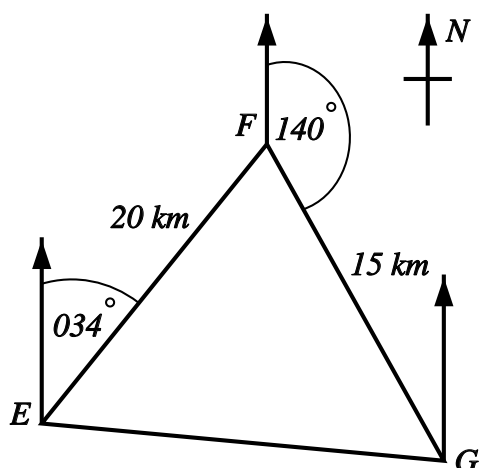
[1]

10) Find the length of the side x giving your answer to 1 decimal place.

[1]



11) From a point E a boat sails on a bearing of 034° for 20 km to F. The boat leaves F and moves on a bearing of 140° for 15 km until it reaches G. Calculate the distance of G and E leaving your answers to 3 significant figures.



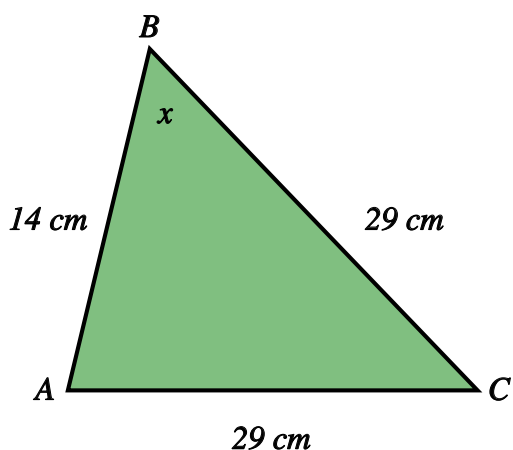
[1]

12) Given triangle ABC where $AB = (x + 9)$ cm, $BC = (x + 3)$ cm, $AC = 18$ cm, and angle $ABC = 60^\circ$. Calculate the value of x giving your answer to the nearest whole number.

[1]

13) Find x in the triangle below, giving your answer to 3 significant figures.

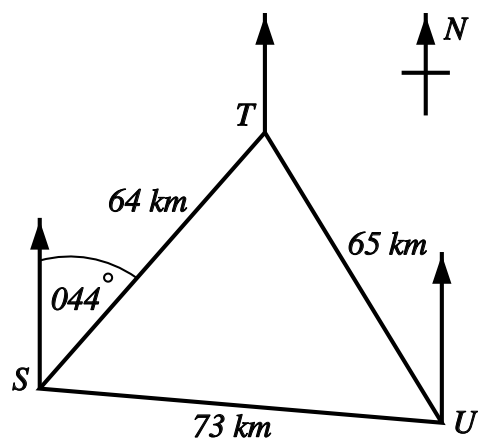
[1]



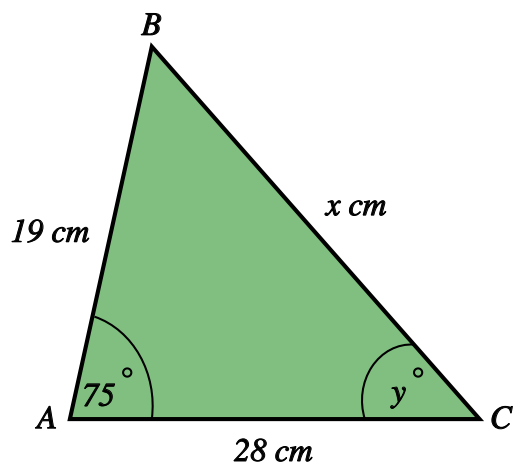
14) In triangle ABC , $AB = 13$ cm, $BC = 18$ cm and $AC = 17$ cm. Find the size of the smallest angle giving your answer to 3 significant figures.

[1]

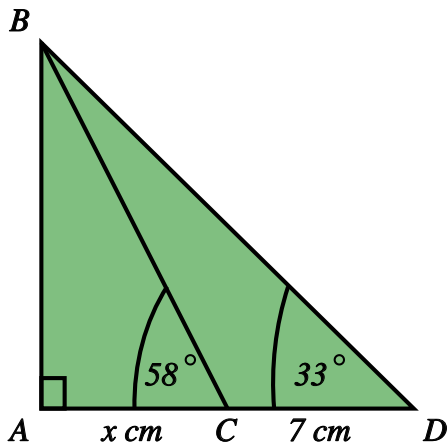
15) A helicopter flies on a bearing of 044° from S to T, where $ST = 64$ km. It then flies for 73 km to a point U. Given that U is 65 km from S, calculate the bearing of U from S giving your answer to the nearest whole number.



16) Find the values of x and y in the triangle below, giving your answer to 3 significant figures. [1]



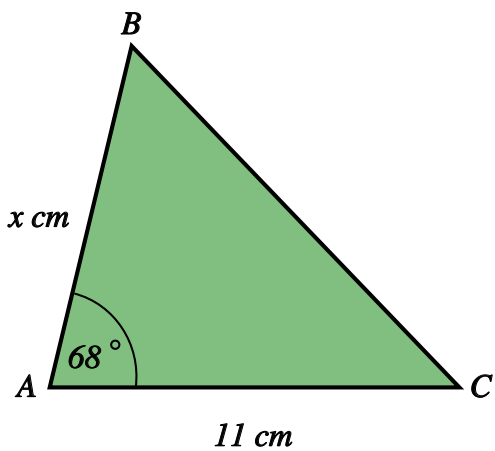
17) Find the length of x in the diagram pictured below, giving your answer to 3 significant places. [1]



18) In triangle LMN , $LM = 12$ cm, $MN = 29$ cm and angle $LMN = 113^\circ$. Find the length of the side LN and the size of the angle MLN , giving your answer to 3 significant figures.

[1]

19) The area of triangle ABC is 70 cm². Find the length of x , giving your answer to 3 significant figures.



[1]

20) In triangle ABC , $AB = (x - 2)$ cm, $AC = (x - 10)$ cm and angle $BAC = 150^\circ$. Given that the area of the triangle is 140 cm², work out the value of x giving your answer to the nearest whole number.

[1]

Solutions for the assessment 2. Sine and Cosine Rules

1) $x = 29.1$ cm

2) $x = 29.2$ cm

3) Distance between towns B and C is 20.7 km

4) $x = 47.4^\circ$

5) Angle $ABC = 60.1^\circ$

6) $x = 2.88$ cm and $y = 26.6^\circ$

7)

a) The bearing of C from B is 181°

b) The distance between towns A and B is 18.4 km

8) acute angle $x = 29.5^\circ$ and obtuse angle $x = 150.5^\circ$

9) The two possible values of angle x are 70.2° and 109.8°

10) $x = 45.4$ cm

11) Distance from G and E is 21.4 km

12) $x = 11$ cm

13) $x = 76.0^\circ$

14) Smallest angle is 43.5°

15) The bearing of U from S is 100°

16) $x = 29.5$ cm and $y = 38.5^\circ$

17) $x = 4.78$ cm

18) $LN = 35.5$ cm and angle $MLN = 18.1^\circ$

19) $x = 13.7$ cm

20) $x = 30$ cm