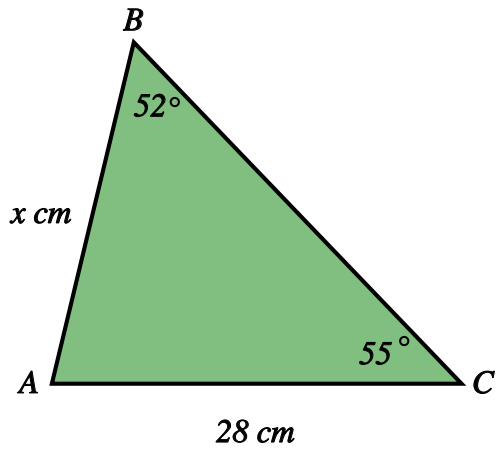
2. Sine and Cosine Rules

Name:	Class:	Date:

Mark	/ 20	%

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



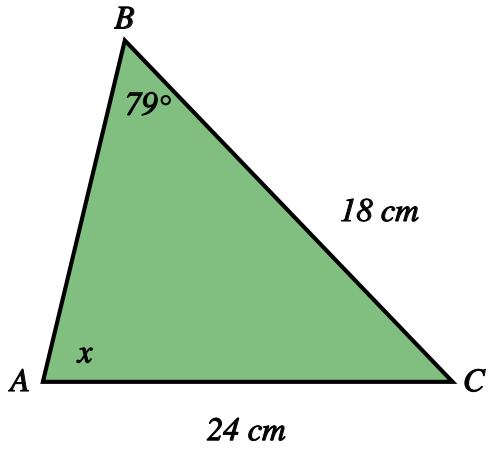
2) Given triangle ABC where $= 29$cm, $= 67^o$ and $= 45^o$. Find the length of the side , giving your answer to 3 significant figures.

[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]

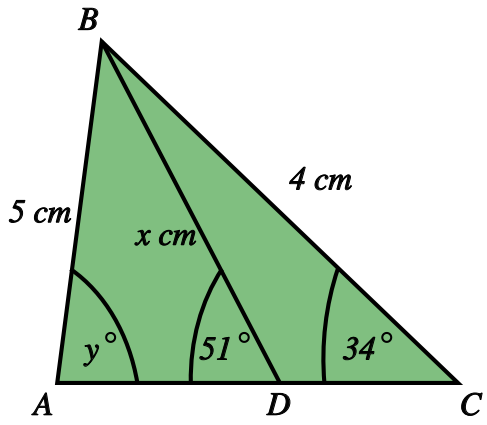
4) Find x in the triangle below, giving your answer to 3 significant figures. [1]



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

[1]

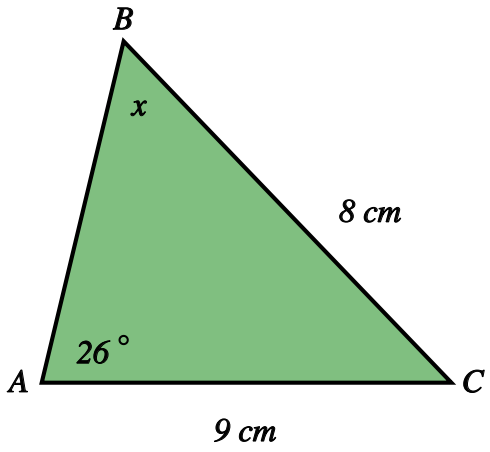
6) Find the values of x and y in the diagram below, giving your answers to 3 significant places. [1]



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]

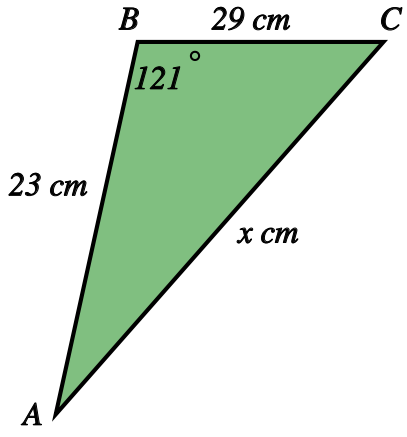
8) Find the size of the two possible angles of x, giving your answer to 1 decimal place. [1]



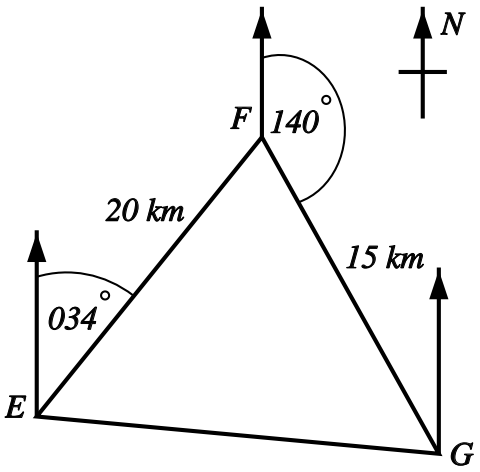
9) In the triangle LMN, LN = 19 cm, MN = 11 cm, angle MLN = 33° and LMN = x . Calculate the size of the two possible values of angle x giving your answer to 1 decimal place.

[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.

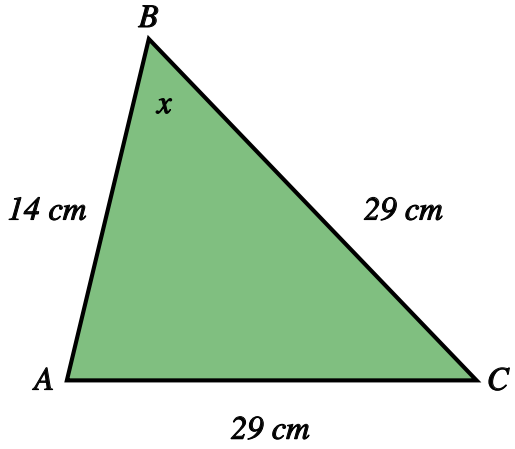


[1]

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

[1]

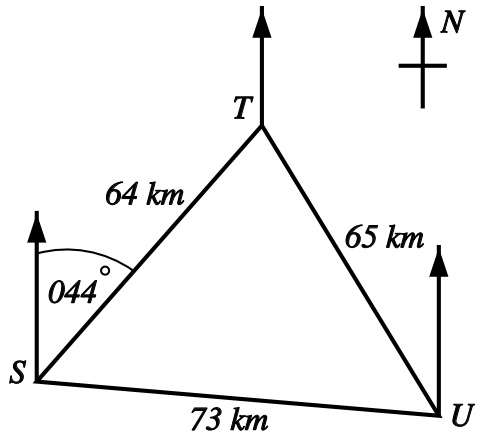
13) Find x in the triangle below, giving your answer to 3 significant figures. [1]



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.

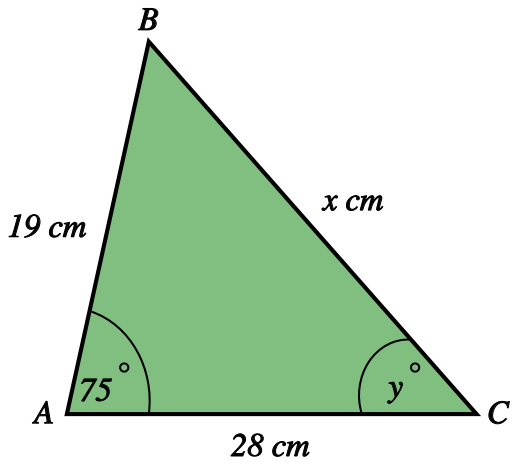
[1]

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.

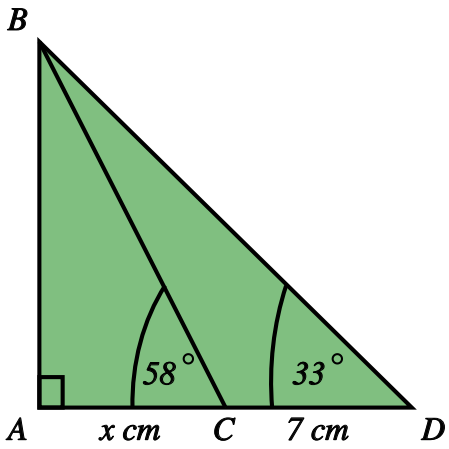


[1]

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



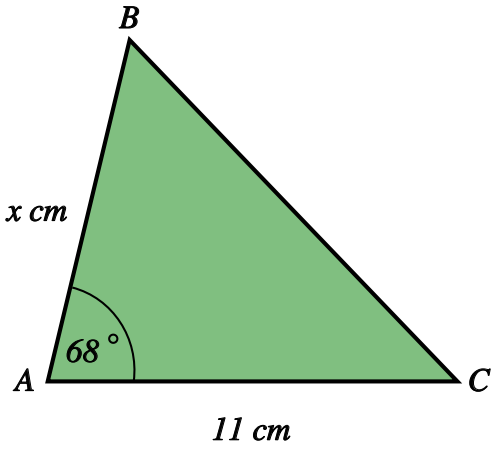
17) Find the length of x in the diagram pictured below, giving your answer to 3 significant places. [1]



18) In triangle LMN, LM = 12 cm, MN = 29 cm and angle LMN = 113°. 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 cm ^{2}. 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 $BAC = 150^o$. Given that the area of the triangle is 140 cm ^{2}, 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) $= 29.2$ cm

3) Distance between towns B and C is 20.7 km

4) $x = 47.4°$

5) Angle $ABC = 60.1°$

6) $x = 2.88$ cm and $y = 26.6°$

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 $x = 29.5°$ and obtuse angle $x = 150.5°$

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) $x = 76.0°$

14) Smallest angle is 43.5°

15) The bearing of U from S is 100°

16) $x = 29.5$ cm and $y = 38.5°$

17) $x = 4.78$ cm

18) LN = 35.5 cm and angle MLN = 18.1°

19) $x = 13.7$ cm

20) $x = 30$ cm