Sine Rule, Cosine Rule and Area Rule

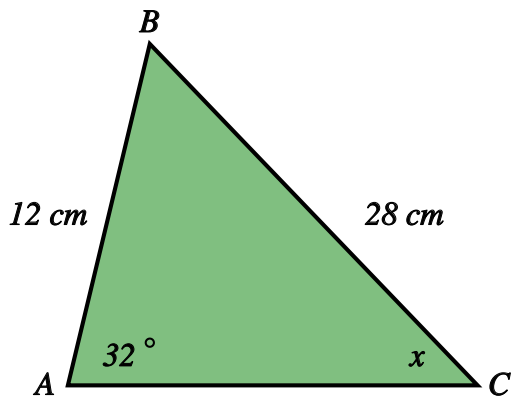| Name:	Class:	Date:

Mark	/ 13	%

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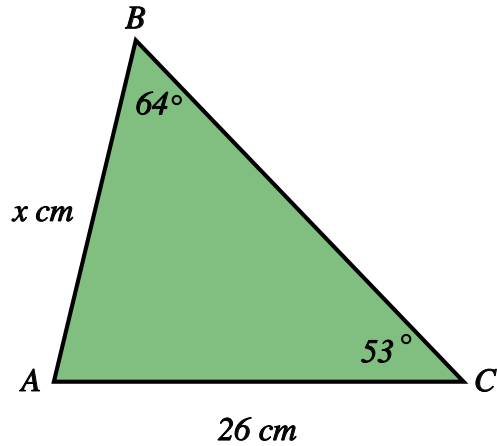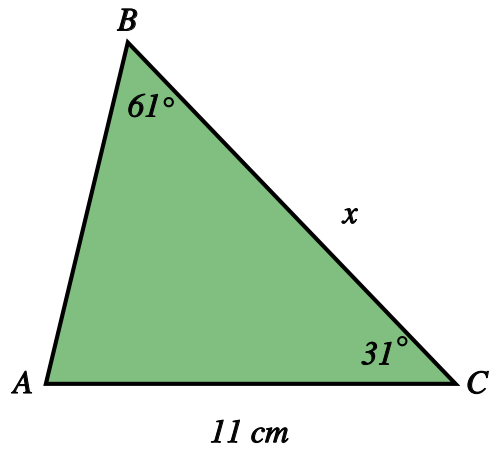

2) Find x in the triangle below, giving your answer to 3 significant figures. [1]
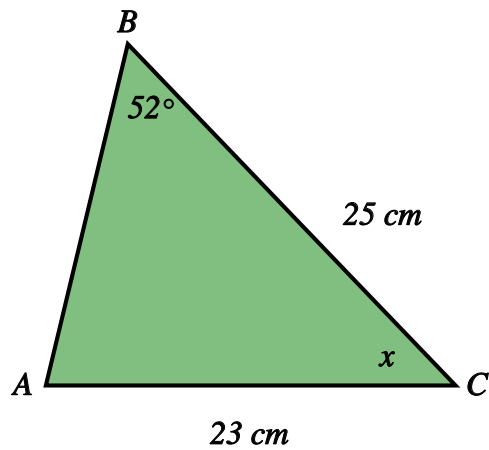
3) Find x in the triangle below, giving your answer to 3 significant figures.　　　　　　　[1]

B

61°

x

31°

A

C

11 cm

4) Find x in the triangle below, rounding your answer to 1 decimal place.　　　　　　　[1]

B

52°

25 cm

x

A

C

23 cm

5) Find the size of angle x, giving your answer to 1 decimal place.　　　　　　　[1]

B

11 cm

9 cm

22°

x

A

C
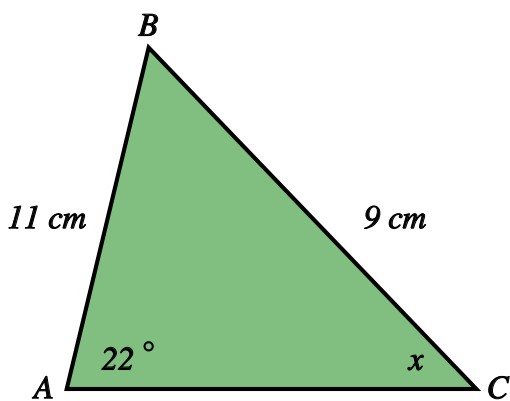
6) The path of a satellite orbiting the earth causes it to pass directly over two tracking stations A and B, which are 62 miles apart. When the satellite is on one side of the two stations, the angles of elevation at A and B are measured to be 87.8° and 83.6°, respectively.
Find how far the satellite is from station A and how high the satellite is above the ground. Round your answers to 2 decimal places.
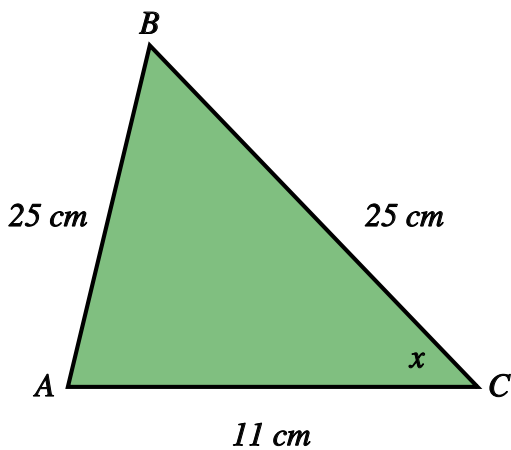
[1]

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

B

20 cm   x cm

74 °

A   C

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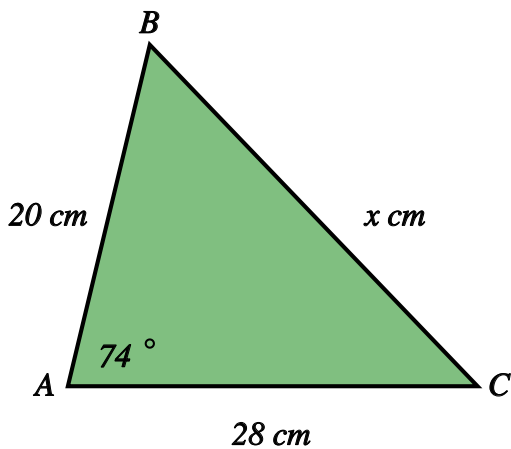
8) Find *x* in the triangle below, giving your answer to 3 significant figures. [1]

B

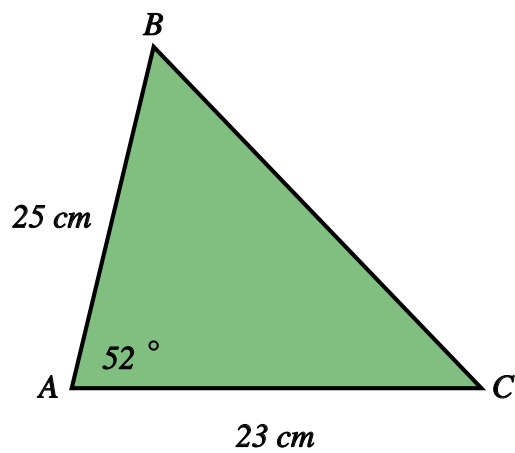25 cm   25 cm

x

A   C

11 cm

9) Points *A* and *B* are separated by a building. To find the distance between them, a surveyor locates a point *C* such that angle CAB =51.6°.
The distance AC = 382 m and BC = 549 m.
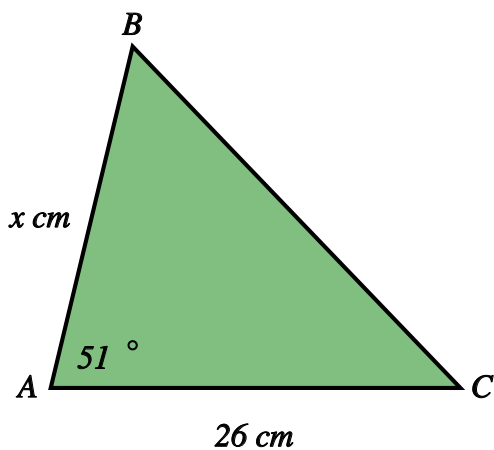Find the distance from *A* to *B*, giving your answer to 3 significant figures.

[1]

10) Find the area of the triangle below, giving your answer to 3 significant figures.   [1]
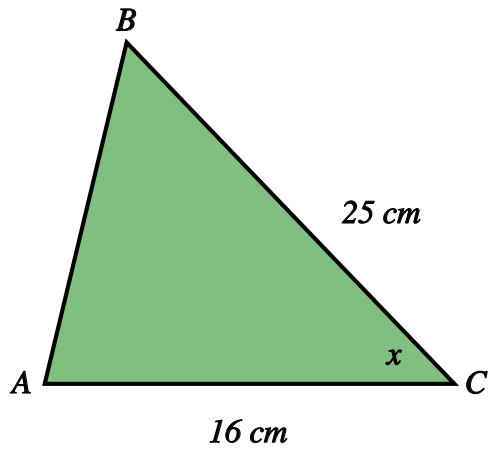
B

25 cm

52 °

A

C

23 cm

11) The area of triangle ABC is 260 cm ^{2}. Find the length of x, giving your answer to 3 significant figures.

B

x cm

51 °

A

C

26 cm

[1]

12) The area of triangle ABC is 180 cm ^{2}. Find the size of angle x, giving your answer to 3 significant figures.

B

25 cm

x
A   C
16 cm

[1]

13) The area of triangle ABC is 122 cm ^{2}.   [1]
Find the perimeter of triangle ABC, giving your answer to 3 significant figures.

B

15 cm   25 cm

A   C
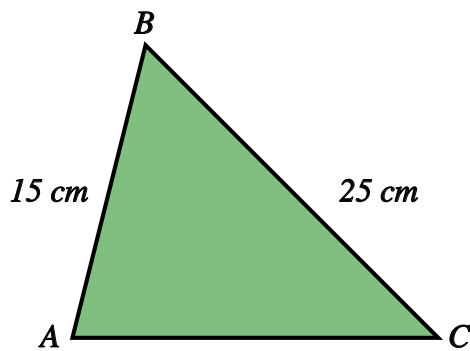
Solutions for the assessment Sine Rule, Cosine Rule and Area Rule

1) $x = 23.1$ cm

2) $x = 13.1°$

3) $x = 12.6$ cm

4) $x = 69.1°$

5) acute angle $x = 27.2°$, obtuse angle $x = 152.8°$

6) Distance = 841.28 miles, Height = 840.66 miles

7) $x = 29.6$ cm

8) $x = 77.3°$

9) Distance = 432 m

10) Area = 227 cm^2

11) $x = 25.7$ cm

12) $x = 64.2°$

13) Perimeter = 56.7 cm