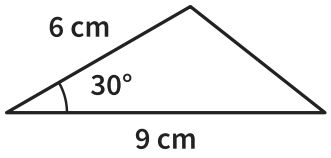
Area of a triangle: ½ab sin C

ANSWERS

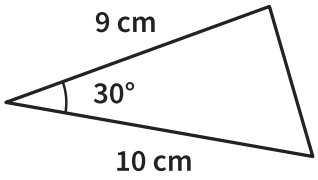
1
Find the area.



½ × 6 × 9 × sin 30°

Area = 13.5 cm²

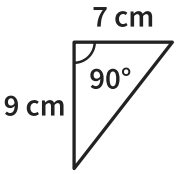
2
Find the area.



½ × 10 × 9 × sin 30°

Area = 22.5 cm²

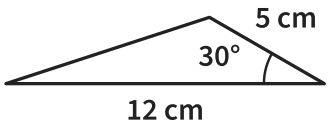
3 Notice the change!
Find the area.



½ × 9 × 7 × sin 90°

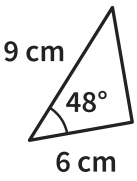
Area = 31.5 cm²

4
Find the area.



Area = 15 cm²

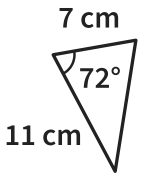
5
Find the area to 1 decimal place.



½ × 9 × 6 × sin 48°

Area = 20.1 cm²

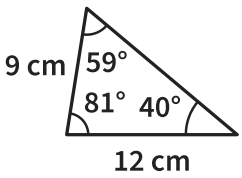
6
Find the area to 1 decimal place.



½ × 11 × 7 × sin 72°

Area = 36.6 cm²

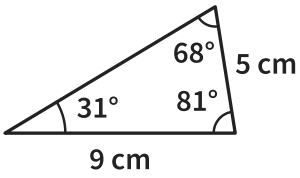
7 Notice the change!
Find the area to 1 decimal place.



the angle between 9 cm and 12 cm: 81°

Area = 53.3 cm²

8
Mo works out the area like this:
½ × 5 × 9 × sin 68°. Explain his mistake and find the area.



68° is not between 5 cm and 9 cm

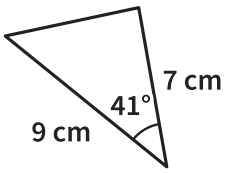
½ × 5 × 9 × sin 81°

Area = 22.2 cm²

Area of a triangle: ½ab sin C *further practice*

ANSWERS

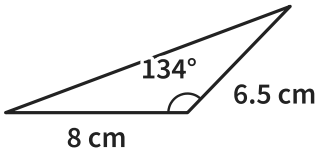
9
Find the area to 1 decimal place.



Area = ½ × 9 × 7 × sin 41°

Answer 20.7 cm²

10
Find the area to 1 decimal place.



Area = ½ × 6.5 × 8 × sin 134°

Answer 18.7 cm²

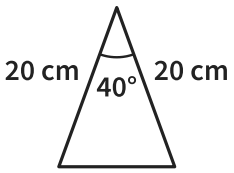
11
In triangle DEF, DE = 9 cm, EF = 12 cm and angle DEF = 65°. Find the area of the triangle to 1 decimal place.

the angle between DE and EF is E

Area = ½ × 9 × 12 × sin 65°

Answer 48.9 cm²

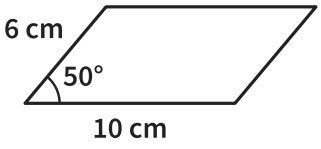
12
A bunting flag is a triangle. Its two long edges are each 20 cm and meet at an angle of 40°. Find the area of the flag to 1 decimal place.



Area = ½ × 20 × 20 × sin 40°

Answer 128.6 cm²

13
Find the area of the parallelogram to 1 decimal place.



two triangles, each ½ × 6 × 10 × sin 50°

2 × 22.98

Answer 46.0 cm²

14
A garden is a triangle with sides of 12 m and 15 m and an angle of 100° between them. Turf costs £4.50 a square metre. Find the cost of turfing the garden, to the nearest pound.

Area = ½ × 12 × 15 × sin 100° = 88.63 m²

4.50 × 88.63, about £399

Answer £399

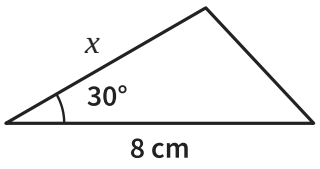
15
Explain why a triangle with two sides of 6 cm and 8 cm can never have an area of more than 24 cm².

Area = 24 × sin (the angle)

sin is 1 at most, at 90°

So 24 × 1 = 24 at most

16
The area of the triangle is 12 cm².
Find x.



½ × x × 8 × sin 30° = 12

2x = 12

x = 6 cm