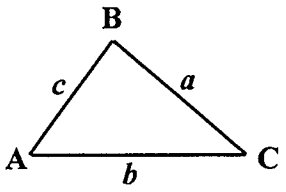
Trigonometry

The area of **any** triangle is given by one-half the product of two adjacent edges and the angle **between** them.

Area of Triangle **ABC** = $\frac{1}{2}$ *ab* sin **C**



1.	Find the area of triangle ABC when	$a = 8.4$ cm	$b = 3.7$cm	C = 44°	
2.	Find the area of triangle ABC when	$b = 5.9$ cm	$c = 7.2$ cm	A = 52°	
3.	Find the area of triangle ABC when	AB = 6.7 cm	AC = 9.3 cm	∠ BAC = 55°	
4.	Find the area of triangle ABC when	BC = 3.1 cm	AC = 5.4cm	∠ ACB = 37°	
5.	Find the area of triangle ABC when	AB = 14.5 cm	BC = 9.6 cm	∠ ACB = 81°	∠ ABC = 58°
6.	Find the area of triangle ABC when	$a = 2.8$ cm	$c = 4.1$ cm	A = 40°	B = 31°
7.	Find the area of triangle XYZ when	XY = 4.3 cm	XZ = 3.2 cm	∠ YXZ = 55°	∠ YZX = 78°
8.	Find the area of triangle XYZ when	$y = 8.8$ cm	$x = 5.7$ cm	Z = 21.4°	X = 30.1°
9.	Find the area of triangle PQR when	QR = 12.4 cm	PR = 17.6 cm	∠ QPR = 44.7°	∠ PRQ = 49.2°
10.	Find the area of triangle LMN when	LN = 12.1 cm	MN = 10.6 cm	∠ LMN = 67.5°	∠ LNM = 58.5°

11. A triangle of area 21.4 cm^2 has two edges measuring 9.8 and 5.9 cm respectively.
Find the angle between those two edges.

12. A triangle ABC has an area of 17.3 cm^2. AB = 6.3 cm and ∠ BAC = 31.4°.
What is the length of the edge AC?

13. A triangle ABC has two edges measuring 4.5 and 7.8 cm respectively.
What is the greatest area this triangle can have?
What angle between the two edges gives this greatest area?

14. A parallelogram PQRS has PQ = 11.4 cm, PS = 15.7 cm and ∠ QPS = 53°.
Find the area of the complete parallelogram.

15. A rhombus has an edge lengths of 2.75 cm and an interior vertex angle of 65°.
What is its area?

16. A rhombus has an area of 36 cm^2 and edges of length 6.7 cm.
Give the sizes of its interior vertex angles.

17. A parallelogram has an area of 63 cm^2.
One of its edge-lengths is 7.2 cm, and one interior vertex angle is 54°.
What is its other edge-length?

18. Two triangles have the same area.
One has edges of 4.7 and 6.8 cm with an included angle of 49°.
The other has two edges measuring 7.3 and 3.9 cm respectively.
Calculate the size of one of the interior vertex angles of the second triangle.