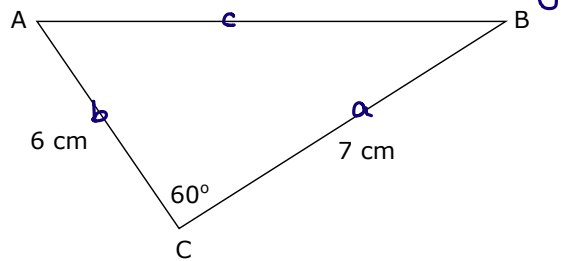
Area of a triangle / Cosine rule

How to . . . You are given Cosine Rule, Sine Rule and the general formula for area of a triangle.

ABC is a triangle



a) Work out the area of triangle ABC. Give your answer correct to 3 significant figures.

Area of triangle $= \frac{1}{2}ab\sin C = \frac{1}{2} \times 6 \times 7 \times \sin 60$

$= 18.18653348 = 18.2\text{ cm}^2$

b) Work out the length of the side AB. Give your answer correct to 3 significant figures.

$c^2 = a^2 + b^2 - 2ab\cos C$

$= 6^2 + 7^2 - 2 \times 6 \times 7 \times \cos 60$

$= 36 + 49 - 42$

$c^2 = 43$

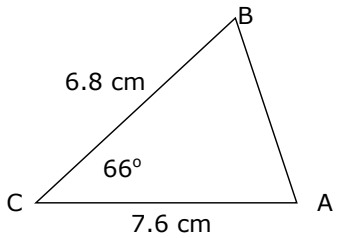
$c = \sqrt{43} = 6.557438524$

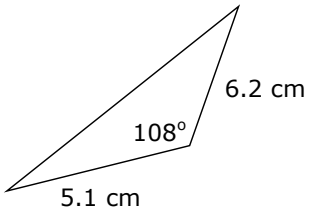
$c = 6.56\text{cm}$

(5)

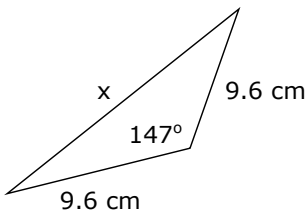
Now have a go yourself . . .

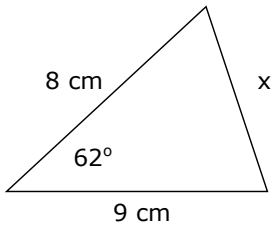
1) Calculate the area of each of the triangles correct to 3 significant figures.





2) Calculate the length of the sides marked x. Give your answer correct to 3 significant figures.





3) In triangle XYZ. XY = 20.3 cm, XZ = 14.5 cm and angle YXZ = 38° .

a) Calculate the length of YZ

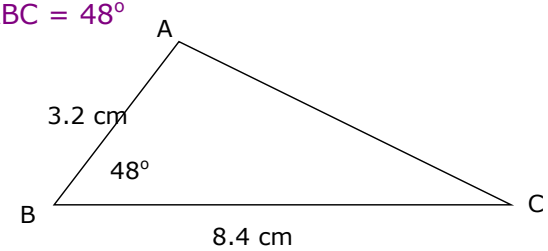
b) Calculate the area of the triangle

Exam Questions

AB = 3.2 cm

BC = 8.4 cm

Angle ABC = 48°



a) Calculate the area of the triangle.

b) Calculate the perimeter of the triangle.

(5)

Ready to be marked ?

Checklist

☐ Answer checked

☐ Working out shown

Keywords

Things to remember …

What went well …

Teacher comment ..