chapter 2 **Trigonometry 1**

Section 2.5 The cosine rule

Sine Rule

$$\frac{a}{\sin A} = \frac{b}{\sin B}$$

Interested in?

2 angles
+ 2 sides

Cosine Rule

$$a^2 = b^2 + c^2 - 2bc\cos A$$

Interested in?

3 sides
+ 1 angle

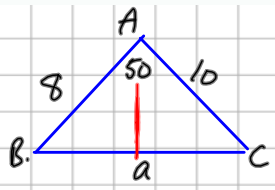
PROJECT MATHS – STRAND 2 Text & Tests 4 LEAVING CERTIFICATE HIGHER LEVEL

The Cosine Rule: $a^2 = b^2 + c^2 - 2bc\cos A$

Example 1

In the triangle ABC, |AB| = 8, |AC| = 10 and |∠BAC| = 50°.
Find |CB|.

let $|CB| = a$



$$a^2 = 8^2 + 10^2 - 2(8)(10)\cos 50°$$

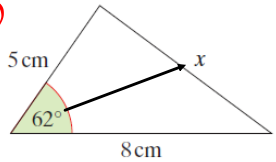
$$a^2 = 61.15$$

$$a = 7.8$$

Exercise 2.5

1. Calculate the length of the side marked x in each of these triangles.
Give your answers correct to 1 decimal place.

(i)



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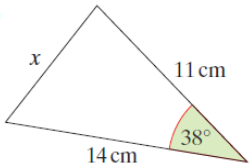

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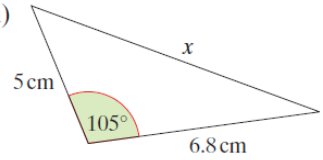

Cosine Rule

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

$x^2 = 5^2 + 8^2 - 2(5)(8)\cos 62°$

$x^2 = 51.44$

$x = 7.2$ cm (1 dp)