TRIGONOMETERY (Q 4 & 5, PAPER 2)

LESSON NO. 2: AREA OF A TRIANGLE

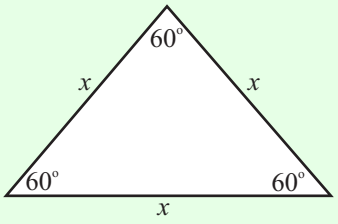
2005

5 (a) The area of an equilateral triangle is $4\sqrt{3}$ cm^2. Find the length of a side of the triangle.

SOLUTION

5 (a)

In an equilateral triangle, all sides and all angles are equal.



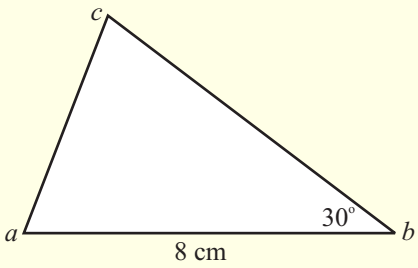
$A = \frac{1}{2}ab\sin C$ 5

$A = \frac{1}{2}(x)(x)\sin 60^\circ = 4\sqrt{3}$

$\Rightarrow \frac{1}{2}x^2(\frac{\sqrt{3}}{2}) = 4\sqrt{3} \Rightarrow x^2 = 16 \Rightarrow x = 4$ cm

2002

5 (a) The area of triangle abc is 12 cm^2. $|ab| = 8$ cm and $|\angle abc| = 30^\circ$. Find $|bc|$.



SOLUTION

5 (a)

$A = \frac{1}{2}(8)(|bc|)\sin 30^\circ = 12 \Rightarrow 4(|bc|)\frac{1}{2} = 12$

$\Rightarrow |bc| = 6$ cm

$A = \frac{1}{2}ab\sin C$ 5