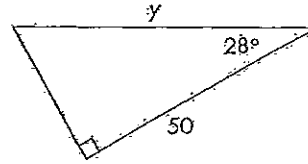# Trigonometry stage 5-3
why? just cos!

Question 1 (2)
Find the value of the pronumeral in this diagram:
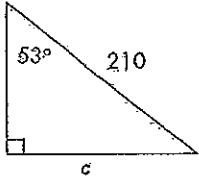
Question 2 (3)
Find the value of the pronumeral in this diagram:

Question 3 (3)
A wheelchair access ramp 6.4 m long makes an angle of 14°25′ with the ground. How far above the lower end is the upper end of the ramp?
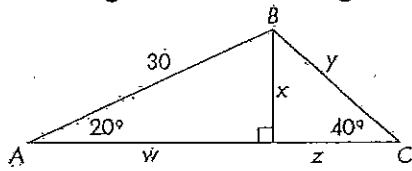
Question 4 (3)
A ladder leans against a vertical wall. The base of the ladder is 1.5 m from the base of the wall and the ladder reaches 3.5 m up the wall. What is the angle the ladder makes with the wall, to the nearest minute?

Question 5 (4)

The diagram shows two right-angled triangles side by side, forming a non-right-angled triangle.
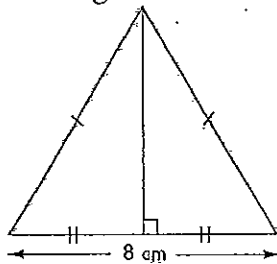

Find lengths w, x, y and z. (now I know my ABC......)

Question 6 (2)

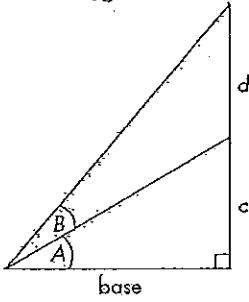The diagram shows an equilateral triangle with base 8 cm. (The base angle is 60°.)

Find its height.

Question 7 (4)

The diagram shows two triangles with a common side. The base length is 20 m.

(a) *Lengths c and d are each equal to 10 m.*
Find the size of angle *A*.

(b) Find the size of angle *B*.

(c) Explain why angles *A* and *B* are not equal.

(d) Now make angles *A* and *B* each equal to 30°. Find the new lengths of *c* and *d*.

Question 8 (3)

Find the exact values for sine, cosine and tangent for 150°.

Question 9(1)
Which of the following statements is untrue?

A $\sin 30° = \dfrac{1}{2}$

B $\tan 60° = \sqrt{3}$

C $\sin 0° = 0$

D $\cos 45° = \dfrac{1}{\sqrt{3}}$

Question 10(1)
Which of the following statements is untrue?

A $\cos 60° = \dfrac{1}{2}$

B $\tan 30° = \sqrt{3}$

C $\tan 0° = 0$

D $\sin 45° = \dfrac{\sqrt{2}}{2}$

(3)

Question 11
Lachlan's house is situated on a triangular block, such that the three roads surrounding it form a right-angled triangle. The angles formed at the points where the roads meet are 30°, 60° and 90°. If the longest road is 88 m long, calculate the length of the two remaining roads, without using a calculator.

(3)

Question 12
Given the following angle and two sides in the diagram below, find the remaining angles.
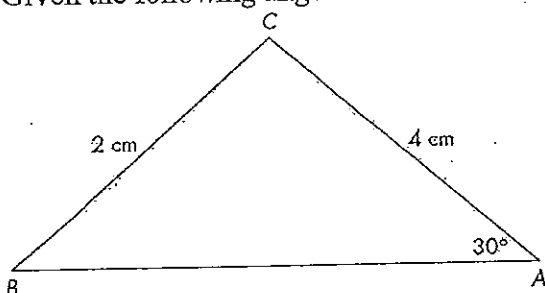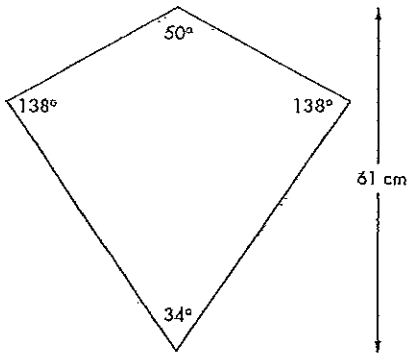

(Answer in degrees and minutes.)

Question 13 (3)

Martin's kite has angles of 138°, 138°, 50° and 34°. If the height from the top to the bottom is 61 cm, find:

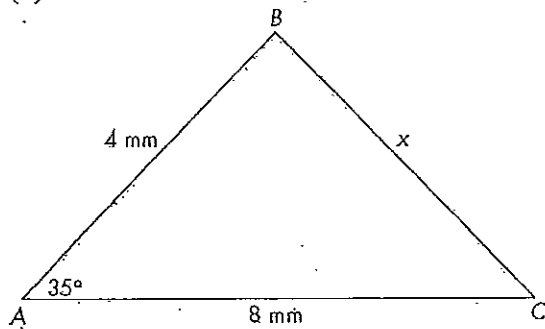(a) the length of all the sides on his kite, correct to two decimal places

(b) the total area of material in cm^2 that covers the kite, correct to two decimal places
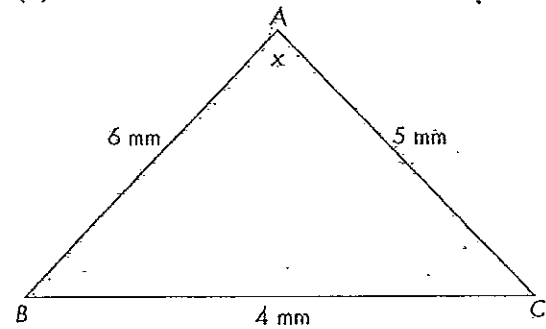
Question 14 (4)

Find x in each of the following triangles to two decimal places or in degrees and minutes.
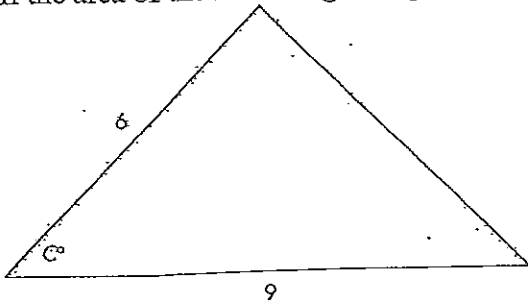
(a)

(b)

Question 15

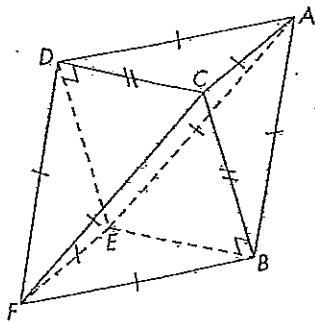If the area of the following triangle is 20 m^2, find C in degrees and minutes.

Question 16

An 8-sided die is made by joining two identical square pyramids by their bases, as shown in the diagram below.

Find the length of AF If the length of AC is 16 cm, and the length of BC is 20 cm.