Quick Quiz

(1)   Write down all the integers which satisfy the inequality
$$-2 < n < 3.$$

(2)   A sequence is described by this iterative formula:

$$u_{n+1} = u_n + 6 \qquad u_1 = 4$$

Work out the 5th term of the sequence.

(3) $a = 5$, $b = -6$ and $c = -3$
Work out the value of $b^2 - 4ac$.

(4)   Solve the equation $\dfrac{24}{2x + 1} = 3$

(5) p is an acute angle.
$\cos(p) = 0.25$.

Work out the value of p, correct to 1 decimal place.

Review of Session 9

(1)   Express $\sqrt{90}$ in the form $a\sqrt{b}$, where a and b are integers greater than 1.

(2)   Simplify the expression
$$(1 + \sqrt{3})(1 + \sqrt{5}) - \sqrt{15}$$

(3)   Multiply out and simplify:

(a) $(\sqrt{7} - 2)(\sqrt{7} + 1)$

(b) $(3\sqrt{2} - 4)(3\sqrt{2} + 4)$

(c) $(\sqrt{5} - \sqrt{2})^2$

(4)   Rationalise the denominators in the following. Simplify your answers where possible.

(a) $\dfrac{8}{\sqrt{6}}$ *(b)* $\dfrac{1}{4\sqrt{2}}$

(c) $\dfrac{1}{3 + \sqrt{7}}$ *(d)* $\dfrac{4\sqrt{5}}{7 - 3\sqrt{5}}$

The focus for today's session is …

Similar shapes

Reminder

The two triangles in this diagram are **similar**.
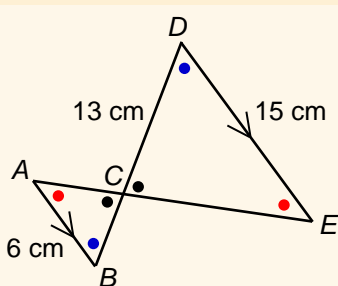
∠BAC = ∠CED (alternate) ●
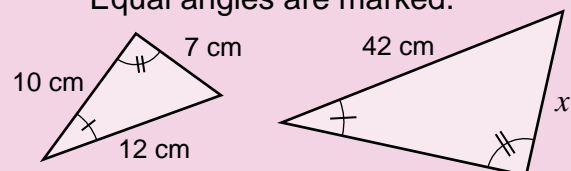∠ABC = ∠CDE (alternate) ●
∠ACB = ∠DCE (vert. opposite) ●

Both triangles contain the same angles. They have the **same shape** but **different size**.

Scale factor = $\dfrac{15}{6}$ = 2.5

CD = 13 cm, so $BC = \dfrac{13}{2.5}$ = 5.6 cm

Practice Questions

(1)   These two triangles are similar. Equal angles are marked.

Calculate the length marked x.

(2)   Work out the lengths a, b and c in these diagrams. (Parallel lines are indicated with arrows.)

lengths in cm

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