Triangles: Review
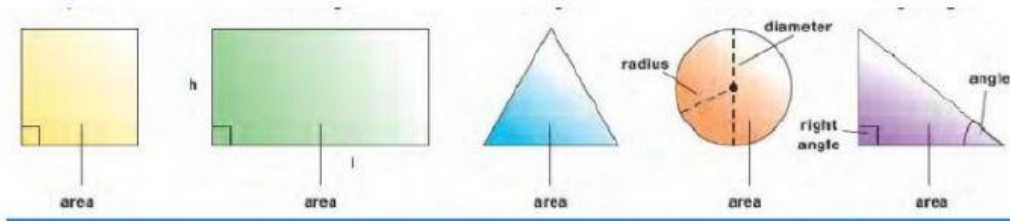

1) What are the essential features of
   - a square?

   - a rectangle?

   - a right-angled triangle?

2) Explain the meaning of
   - Perimeter:

   - Diameter:

   - Radius:

3) What's the formula for measuring the area of
   - a square?

   - a triangle?

   - a circle?

Read the text opposite. Choose the best answer in each case.

1 What is the area of a triangle with a base of 16 cm and a height of 9 cm?
   - a 8 cm²
   - b 17 cm
   - c 17 cm²
   - d 72 cm²

2 Which kind of triangle has no equal angles?
   - a equilateral
   - b isosceles
   - c scalene
   - d right-angled

3 What is each angle in an equilateral triangle?
   - a 30°
   - b 60°
   - c 90°
   - d 180°

4 In the right-angled triangle in Figure 1, the *hypotenuse* is:
   - a the horizontal line.
   - b the vertical line.
   - c the diagonal line.
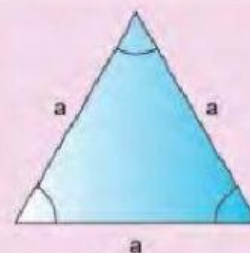   - d the right angle.

LIVEWORKSHEETS

Triangles

There are four kinds of triangles (see Figure 1) but there are two rules that apply to all triangles. Firstly, the internal angles of a triangle always add up to 180° (degrees). Secondly, the area of a triangle is always ½ × base × height.

An *equilateral* triangle has three sides that have the same length. It also has three angles that are the same size. An *isosceles* triangle has two sides that are equal and two angles that are equal. A *scalene* triangle has no equal sides or angles.

The most important kind of triangle is the *right-angled triangle*. It gets its name from the 90° (or *right*) angle, which all of these triangles have. This kind of triangle has one of the most well-known rules in science — Pythagoras' theorem.

Pythagoras was a Greek philosopher and mathematician who lived from about 582 to 500 BCE. He worked with a group of other mathematicians and developed his theorem which states: *the square of the hypotenuse is equal to the sum of the squares of the other two sides.* The hypotenuse is the side opposite the right angle. In the right-angled triangle in Figure 1, we could state the theorem as $a^2 + b^2 = c^2$. We can see the theorem in operation in Figure 2.
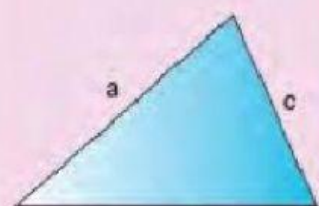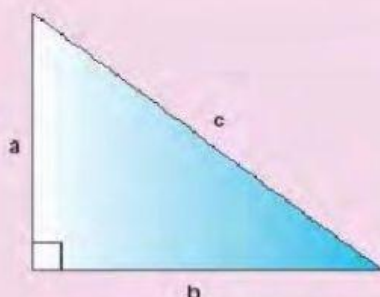
equilateral triangle
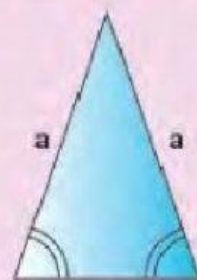
isosceles triangle

scalene triangle

right-angled triangle

Figure 1

Figure 2

If $a = 3$, $a^2 = 9$

If $b = 4$, $b^2 = 16$

therefore $c^2 = 25$

therefore $c = \sqrt{25}$

therefore $c = 5$

Using *which* or *that*

We use ***which*** or ***that*** to introduce extra information about something.

Examples:

*An equilateral triangle has three sides **which** are the same length.*

*Trigonometry is the branch of geometry **that** only deals with right-angled triangles.*

Find and correct the mistake in each sentence.

1 An isosceles triangle has two sides are equal.

2 An isosceles triangle has two angles which is equal.

3 One kind of triangle is the scalene triangle who has no equal sides or angles.

4 There is an important theorem in trigonometry which named after a Greek mathematician.

5 There is an important constant in geometry which it is called pi.

6 A square is a rectangle has four equal sides and four right angles.

7 A rectangle has two pairs of lines which they are parallel.

8 A triangle has three angles which adds up to 180°.