4.11 Triangles

A triangle is a three-sided polygon. In fact, it is the polygon with the least number of sides.

Look at the triangle in the diagram (Fig 4.21). We write ΔABC instead of writing "Triangle ABC".

In ΔABC, how many sides and how many angles are there?

The three sides of the triangle are $\overline{AB}$, $\overline{BC}$ and $\overline{CA}$. The three angles are $\angle BAC$, $\angle BCA$ and $\angle ABC$. The points A, B and C are called the vertices of the triangle.

Being a polygon, a triangle has an exterior and an interior. In the figure 4.22, P is in the interior of the triangle, R is in the exterior and Q on the triangle.

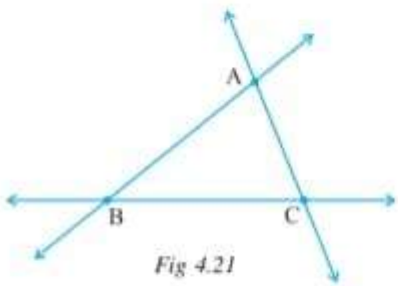


Fig 4.21

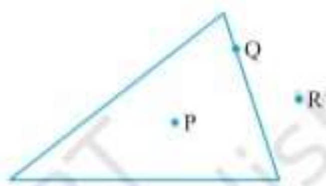
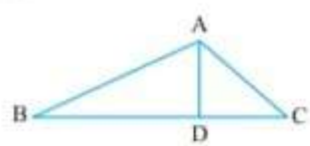


Fig 4.22

EXERCISE 4.4

1. Draw a rough sketch of a triangle ABC. Mark a point P in its interior and a point Q in its exterior. Is the point A in its exterior or in its interior?
2. (a) Identify three triangles in the figure.
   (b) Write the names of seven angles.
   (c) Write the names of six line segments.
   (d) Which two triangles have $\angle B$ as common?



4.12 Quadrilaterals

A four sided polygon is a *quadrilateral*. It has 4 sides and 4 angles. As in the case of a triangle, you can visualise its interior too.

Note the cyclic manner in which the vertices are named.

This quadrilateral ABCD (Fig 4.23) has four sides $\overline{AB}$, $\overline{BC}$, $\overline{CD}$ and $\overline{DA}$. It has four angles $\angle A$, $\angle B$, $\angle C$ and $\angle D$.

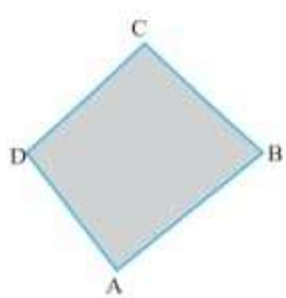


Fig 4.23