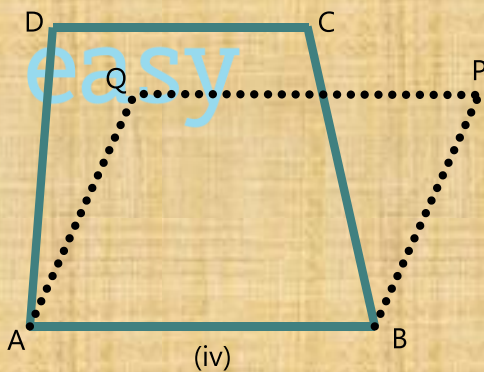
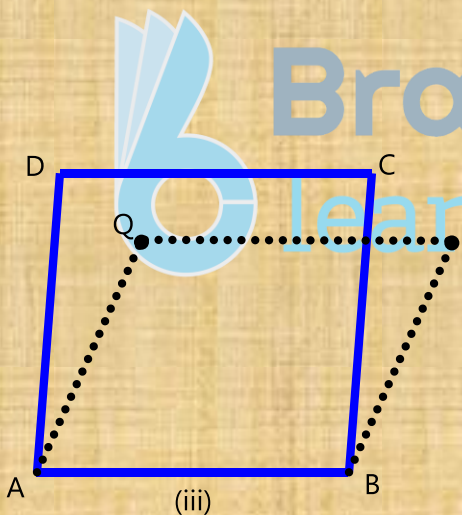
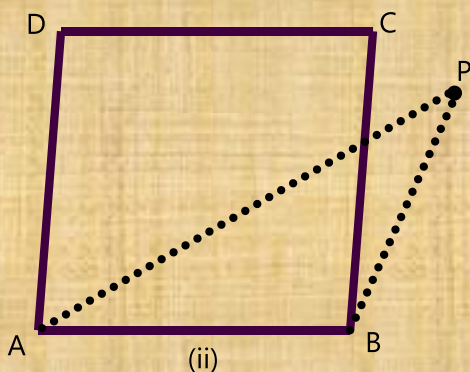
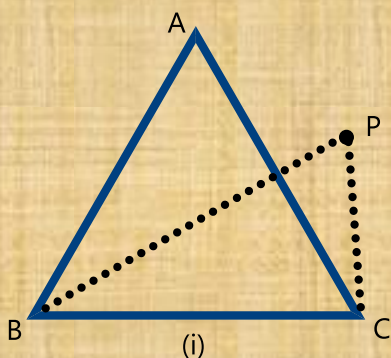


CHAPTER 11

Areas

Figures on the same base and between the same parallels:

Concept:



Let us look at the figures.

In **figure (i)**, triangles ABC and PBC have a common side BC. So we say that $\triangle ABC$ and $\triangle PBC$ are on the same base BC.

Similarly,

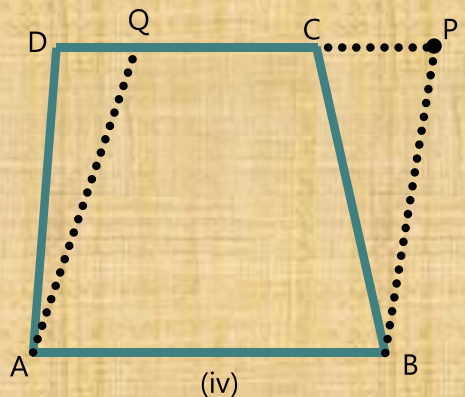
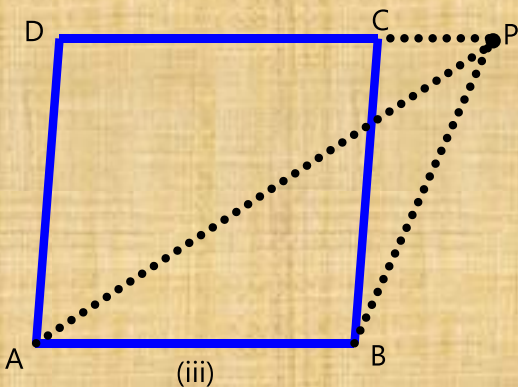
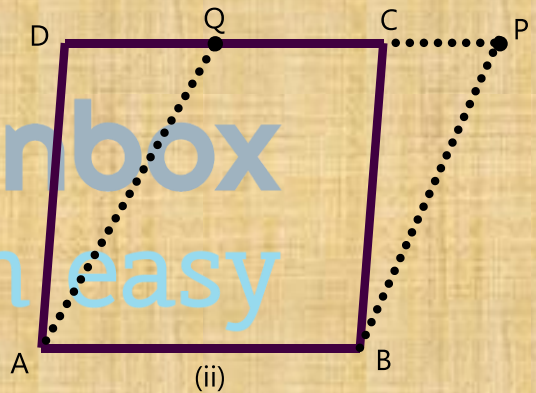
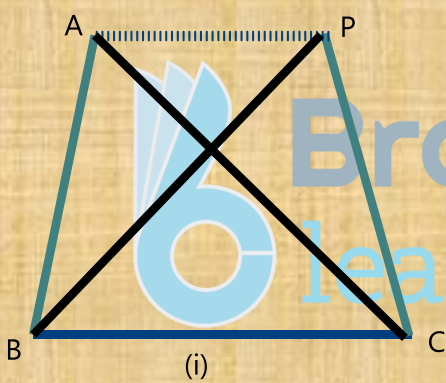
In **figure (ii)**, $\triangle PAB$ and parallelogram ABCD are on the same base AB.

In **figure (iii)**, parallelograms ABCD and ABPQ are on the same base AB.

In **figure (iv)**, trapezium ABCD and parallelogram ABPQ are on the same base AB.

"Thus, if two geometric figures have a common side, we say that they are on the same base".

Concept:



Now,

In **figure (i)**, we observe that AP and BC are parallel line segments and $\triangle ABC$ and $\triangle PBC$ are on the same base BC. In addition to this, the vertex 'A' of $\triangle ABC$ opposite to the base BC and the vertex 'P' of $\triangle PBC$ opposite to the base BC lie on a line AP parallel to the base BC. So we say that $\triangle ABC$ and $\triangle PBC$ are on the same base and between the same parallel lines AP and BC.

In **figure (ii)**, Parallelograms ABCD and ABPQ are on the same base AB and between the same parallels AB and DP as the vertices 'C' and 'D' of parallelogram ABCD and P and Q of parallelogram ABPQ lie on the line DP parallel to the base AB. Similarly,

In **figure (iii)**, $\triangle ABP$ and parallelogram ABCD are on the same base AB and between the same parallel lines AB and DP.

In **figure (iv)**, trapezium ABCD and parallelogram ABPQ are on the same base AB and between the same parallels AB and DP.

“Thus two geometric figures are said to be on the same base and between the same parallel lines if they have a common side (base) and the vertices (or the vertex) opposite to the common base of each figure lie on a line parallel to the base”.

