CHAPTER-9

AREAS OF PARALLELOGRAMS AND TRIANGLES

MIND-MAPPING

Same Base CD and Parallel Lines AQ || CD

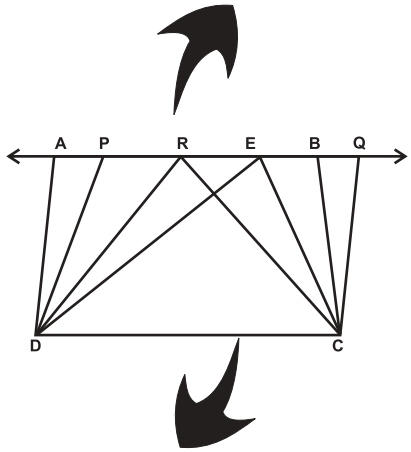
Parallelograms : ABCD and PQCD

ar (ABCD) = ar (PQCD)

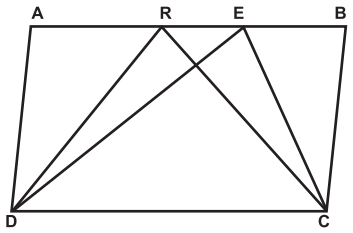
Triangles on Same Base : ΔRDC and ΔEDC

ar (ΔRDC) = ar (ΔEDC)

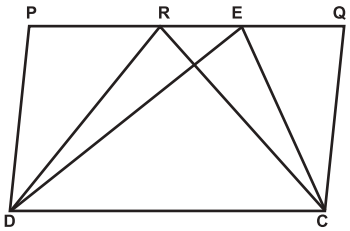
$\therefore$ ar (ΔRDC) = $\frac{1}{2}$ ar (ABCD) = $\frac{1}{2}$ ar (PQCD) = ar (ΔEDC)



Same Base CD and
Parallel Lines AB || CD



Triangles on Same Base =
Δ RDC and Δ EDC
ar (Δ RDC) = ar (Δ EDC)
Also ar (Δ RDC) = $\frac{1}{2}$ ar (ABCD) =
ar (Δ EDC)



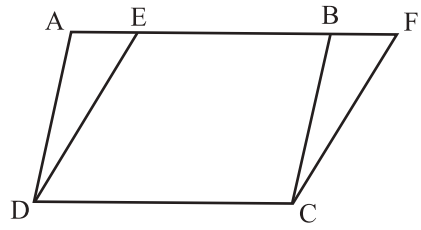
Same Base CD and Same Parallel
Lines PQ || DC
Triangles on same base
= Δ RDC and Δ EDC
ar (Δ RDC) = ar (Δ EDC)
Also ar (Δ RDC) = $\frac{1}{2}$ ar (PQCD)
= ar (Δ EDC)

KEY POINTS

1. Parallelograms on the same base and between same parallels are equal in area.

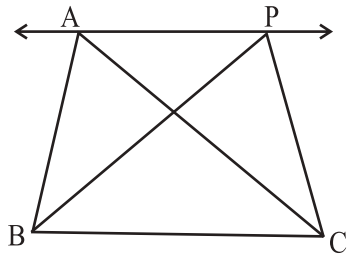
   Two parallelograms ABCD and EFCD on the same base DC and between same parallels AF and DC

   ar (ABCD) = ar (EFCD)



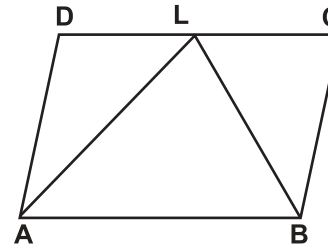
2. Two triangles on the same base and between the same parallels are equal in area.

   Two triangles ABC and PBC on the same base BC and between same Parallel lines BC and AP in the given figure then ar (ΔABC) = ar (ΔPBC)



4. If a triangle and a parallelogram are on the same base and between the same parallels then the area of the triangle is half of the area of parallelogram.

   ar (ΔLAB) = $\frac{1}{2}$ ar (ABCD)



5. The median of a triangle divides it into two triangles of equal area.