Key Notes

Chapter 9

Areas of Parallelograms and Triangles

1. Figures on the same Base and Between the same Parallels

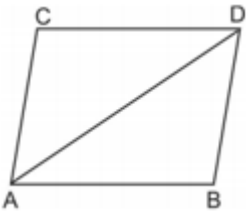
2. Parallelograms on the same Base and between the same Parallels

3. Triangles on the same Base and between the same Parallels

- Area of a figure is a number (in square unit) associated with the part of the plane enclosed by that figure.
- Two congruent figures have equal areas but the converse is not true.
- Area of a parallelogram = $(base\ X\ height)$
- Area of a triangle = $\frac{1}{2} \times base \times height$
- Area of a trapezium = $\frac{1}{2} \times$ ($\times$
- Area of rhombus = $\frac{1}{2} \times$
- Parallelogram on the same base and between the same parallels are equal in area.
- A parallelogram and a rectangle on the same base and between the same parallels are equal in area.
- Triangles on the same base and between the same parallels are equal in area.
- If a triangle and parallelogram are on the same base and between the same parallels, then.

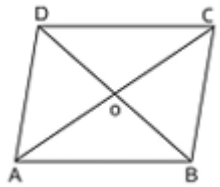
  $(Area\ of\ triangle) = \frac{1}{2}$ (
- A diagonal of parallelogram divides it into two triangles of equal areas.

  In parallelogram ABCD, we have Area of ΔABD = area of ΔACD

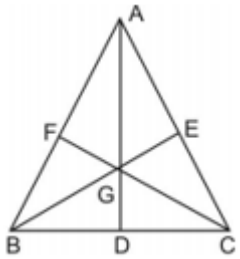


- The diagonals of a parallelogram divide it into four triangles of equal areas therefore

  $\Delta AOB) = ar(\Delta COD) = ar(\Delta AOD) = ar(\Delta BO$



- If a parallelogram and a triangle are on the same base and between the same parallel, then area of the triangle is equal to one half area of the parallelogram.
- A median AD of a ΔABC divides it into two triangles of equal areas. Therefore $ar(\Delta ABD)=ar(\Delta CD)$
- If the medians of a intersect at G, then $ar(\Delta AGB)=ar(\Delta AGC)=ar(\Delta BGC)=\frac{1}{3}ar(\Delta \quad)$



- Triangles with equal bases and equal areas have equal corresponding altitude.