Application of Parallelogram

Quadrilaterals

Convex quadrilaterals: Each angle less than 180°

Concave quadrilaterals: One angle is move than 180°

Special Quadrilaterals

Trapezium

(i) One pair of opposite side is parallel.

Isosceles Trapezium

(i) non-parallel sides are equal

(ii) 2 pair of adjacent angles are equal.

Kite

Two pair of adjacent side are equal

Parallelogram

Both pair of opposite sides are llel
e.g. AB||CD, AD||BC
Properties
(i) Diagonal divide it into 2 cong. Δ

(ii) Opposite sides are equal

(iii) Opposite angles are equal

(vi) Diagonals bisect each other

Rhombus

(i) Diagonals bisect each other at 90°
(ii) All sides are equal

Rectangle

(i) Diagonals are equal

(ii) Each angle is equal to 90°

Square

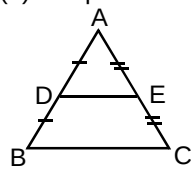
(i) All sides are equal

(ii) Each angle is equal is 90°

(iii) Diagonals are equal & bisects each other at 90°

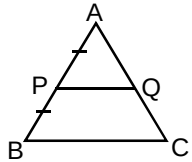
Application of Parallelogram

(a) Mid point theorem



(i) DE || BC
&
(ii) DE = $\frac{1}{2}$BC

(b) Converse of mid point theorem

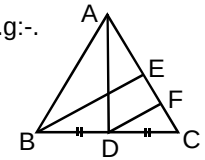


PQ||BC

(i) Q is mid point of AC i.e AQ = CQ

(ii) PQ = $\frac{1}{2}$ BC

E.g:-.



BE is median
BE || DF
AE = CE

So, CF = $\frac{1}{4}$AC

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