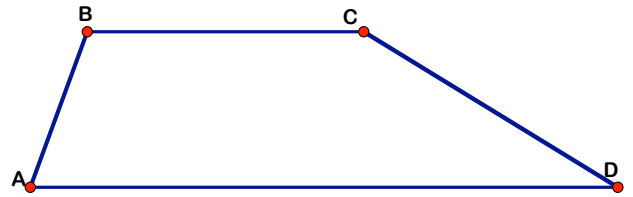


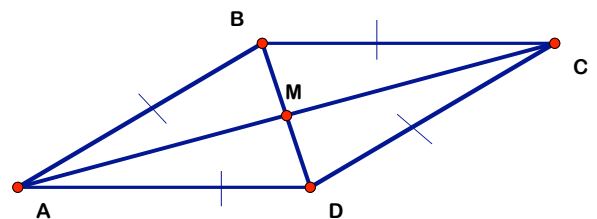
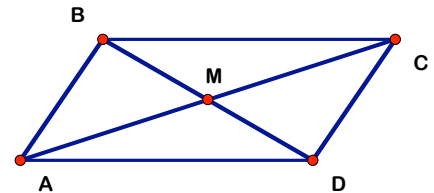
Theorem 23. If ABCD is a trapezoid then $\angle A + \angle B = 180^\circ$ and $\angle C + \angle D = 180^\circ$



Theorem 24. If $\angle A + \angle B = 180^\circ$ then the quadrilateral is a trapezoid.

Theorem 25. The following statements are equivalent:

- A quadrilateral is a parallelogram.
- Opposite angles are equal.
- Opposite sides are equal.
- The point of intersection of the diagonals is also the midpoint of both diagonals.

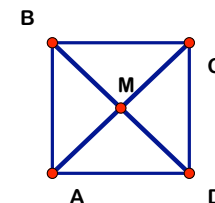
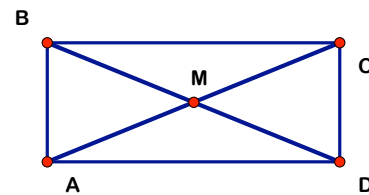


Theorem 26.

- Rhombus is a parallelogram.
- Diagonals of a rhombus are perpendicular to each other.
- Diagonals of a rhombus divide its angles in two equal parts.
- If a quadrilateral is a parallelogram and its diagonals are perpendicular to each other then it is a rhombus.
- If a quadrilateral is a rhombus and its diagonals divide its angles in two equal parts then it is a rhombus.

Theorem 27.

- Rectangle is a parallelogram.
- Diagonals of a rectangle are equal.
- If a quadrilateral is parallelogram and its diagonals are equal, then it is a rectangle.



Theorem 28. Square is a rectangle which is also a rhombus.