

Rectangle is a special case of parallelogram, and Square too has parallel sides.

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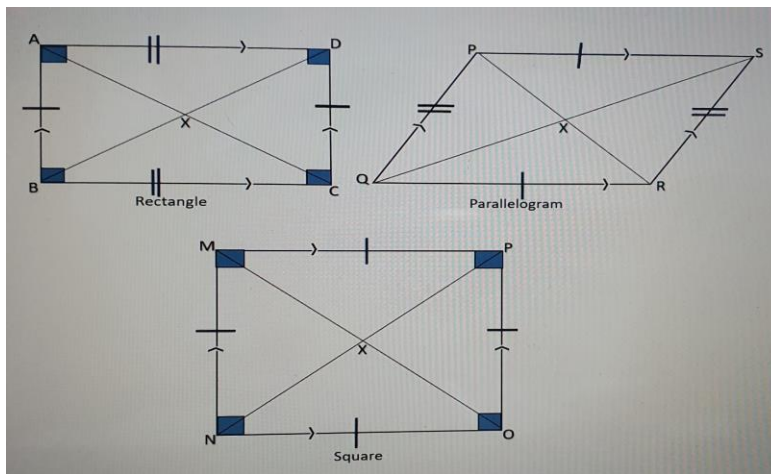
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Abstract:

Here we provide a theoretical proof to conclude that all squares and rectangles are parallelogram whose experimental proof is obvious as per the Euclidean Geometry.

Introduction and Proof:

We know that in square all sides are equal, and in rectangle opposite sides are equal. Thus, in terms of opposite sides and angles, every rectangle is a parallelogram. In rectangle, the diagonal bisects each other as well as divides the squares into two triangles, in which congruency of triangles can be achieved to show that opposite sides are parallel as alternate angles becomes equal being congruent triangles. When alternate angles becomes equal, the sides of rectangles becomes parallel as a inevitable condition. When we apply same condition to square, then square also results in having it's parallel as a result of Euclidean Geometry<sup>1</sup>.



From above figure, it is evidently shown.

Conclusion:

Thus every rectangle is a parallelogram and rectangle itself is a special case of parallelogram having all angles at right angles where as squares also possess opposite sides as parallel.

References:

Euclid's Elements of Geometry . Nature 61, 365 (1900). <https://doi.org/10.1038/061365a0>