QUADRILATERALS

By,

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Class: 8C

WHAT ARE QUADRILATERALS

Quadrilateral is a plane figure that has four sides or edges, four corners or vertices.

They are of standard shapes with four sides like square, rectangle.

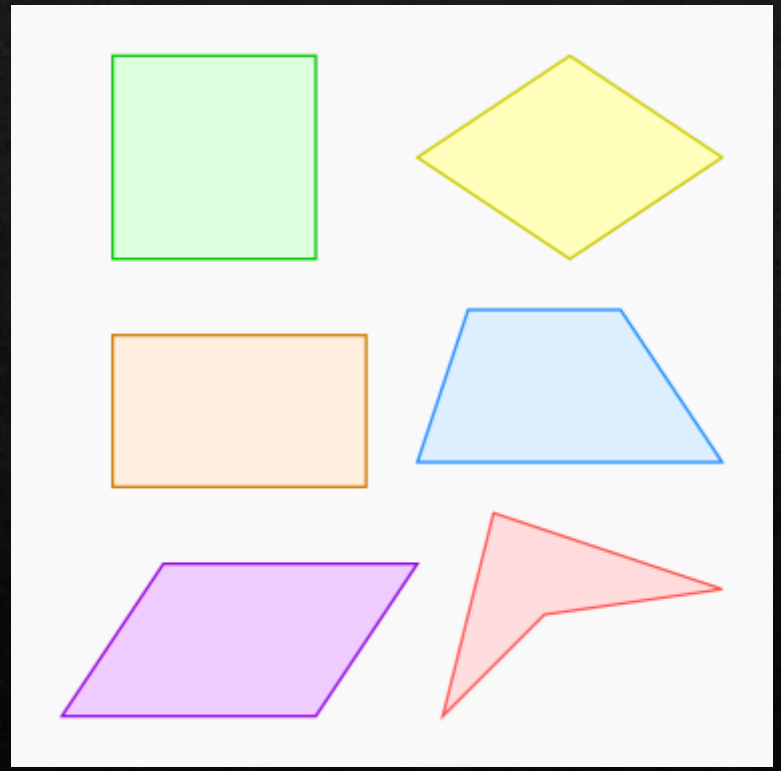
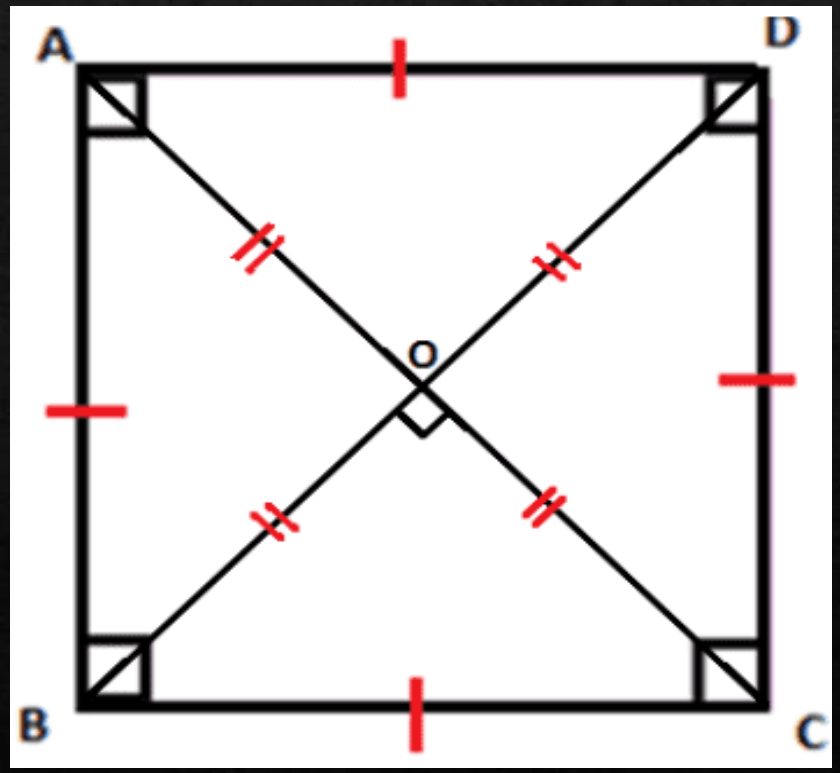


Image of quadrilaterals

PROPERTIES OF QUADRILATERALS



A figure to represent some properties

- Four sides: AB, BC, CD, and DA
- Four vertices: Points A, B, C, and D
- Four angles: ∠ABC, ∠BCD, ∠CDA, and ∠DAB
- ∠A and ∠B are adjacent angles
- ∠A and ∠C are the opposite angles
- AB and CD are the opposite sides
- AB and BC are the adjacent sides
- Every quadrilateral has 4 vertices, 4 angles, and 4 sides
- The total of its interior angles = 360 degrees

TYPES OF QUADRILATERALS

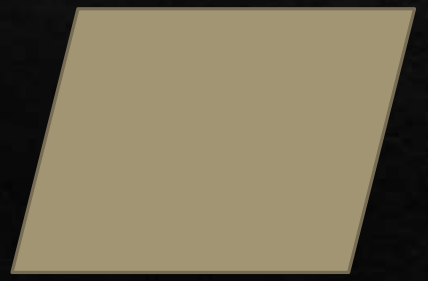
There are 6 types of Quadrilaterals:

1. Trapezium
2. Parallelogram
3. Squares
4. Rectangle
5. Rhombus
6. Kite

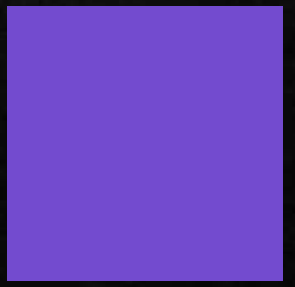
Rhombus

Rectangle

Trapezium



Parallelogram



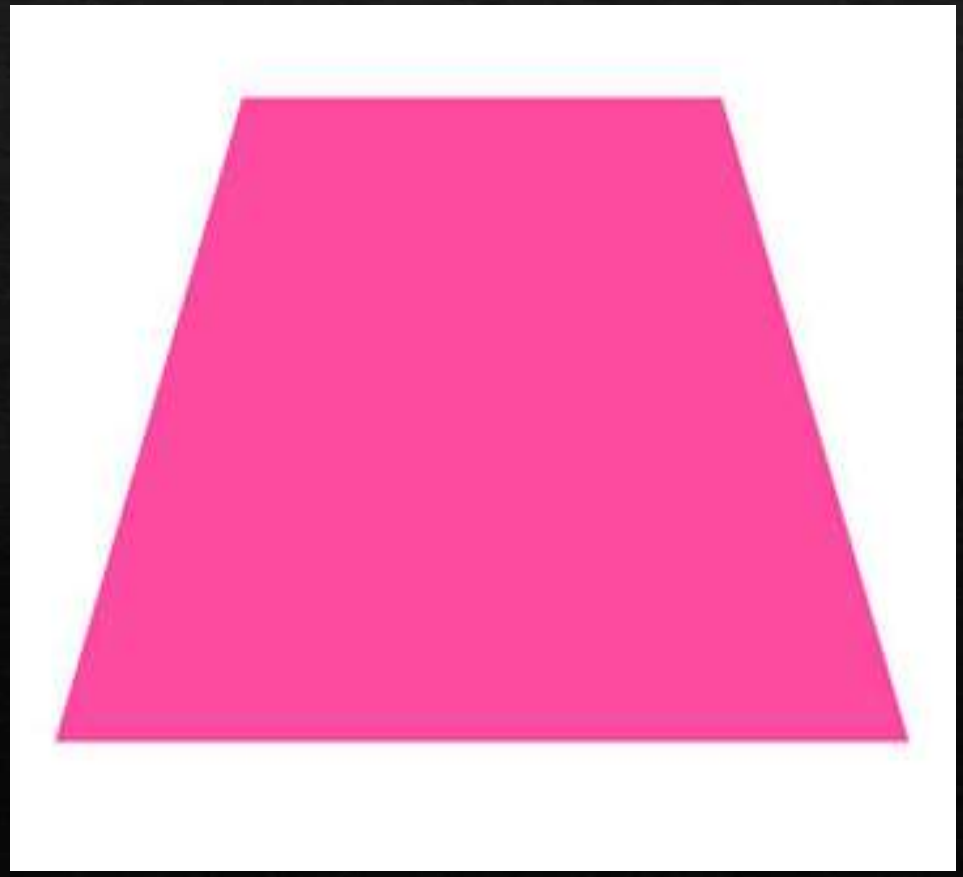
Square

TRAPEZIUM

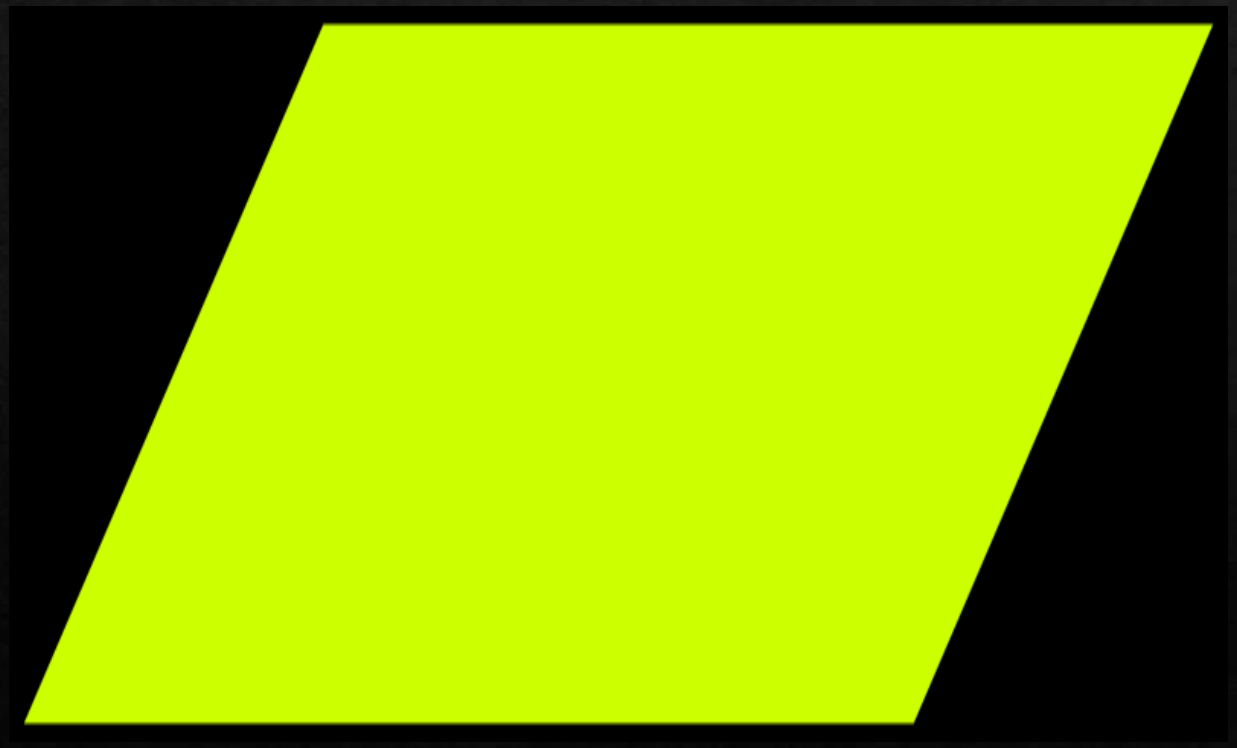
- A trapezium is a 2D shape and a type of quadrilateral, which has only two parallel sides and the other two sides are non-parallel.

Properties of Trapezium:

- Only one pair of the opposite side of a trapezium is parallel to each other
- The two adjacent sides of a trapezium are supplementary (180 degrees)
- The diagonals of a trapezium bisect each other in the same ratio



PARALLELOGRAM



- A parallelogram is a two-dimensional geometrical shape, whose sides are parallel to each other.

Properties of Parallelogram:

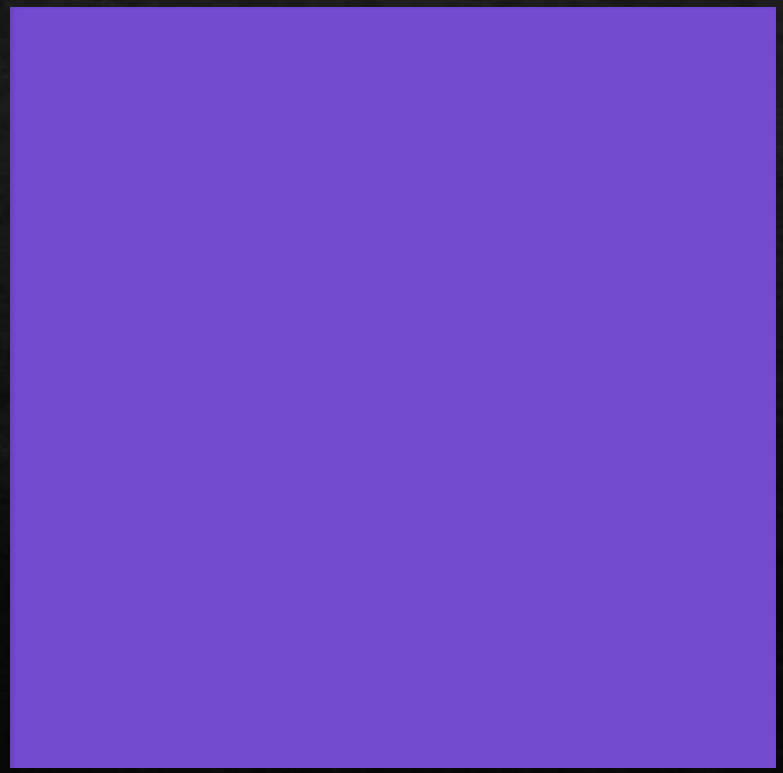
- The opposite side of the parallelogram are of the same length
- The opposite sides are parallel to each other
- The diagonals of a parallelogram bisect each other
- The opposite angles are of equal measure
- The sum of two adjacent angles of a parallelogram is equal to 180 degrees

SQAURE

- A square is a two-dimensional plane figure with four equal sides and all the four angles are equal to 90 degrees.

Properties of Square:

- All the sides of the square are of equal measure
- The sides are parallel to each other
- All the interior angles of a square are at 90 degrees (i.e., right angle)
- The diagonals of a square perpendicular bisect each other



RECTANGLE

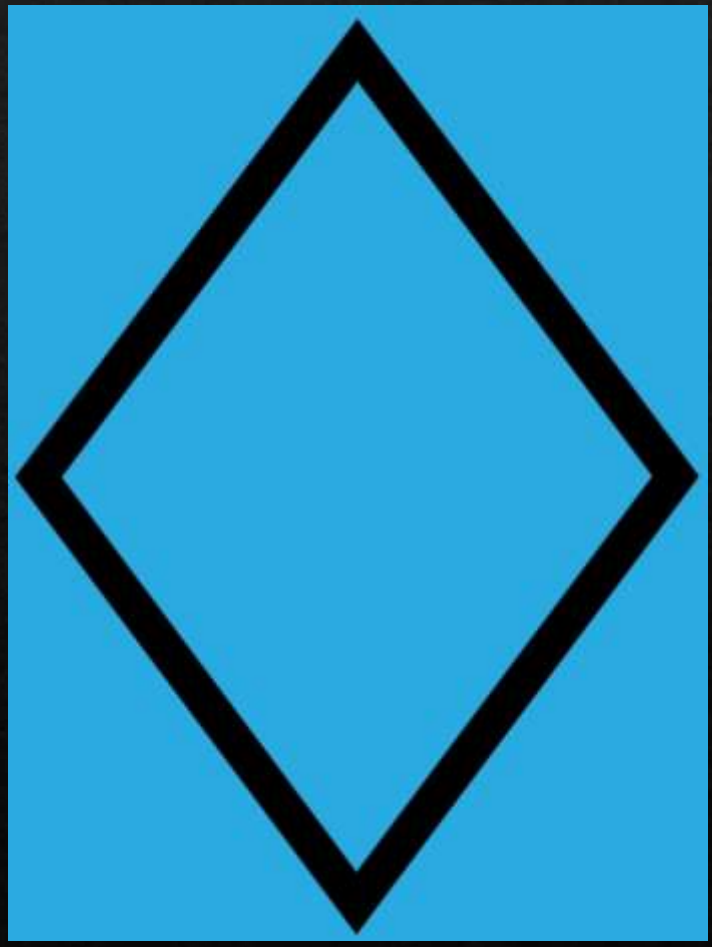
- A Rectangle is a four sided-polygon, having all the internal angles equal to 90 degrees. The two sides at each corner or vertex, meet at right angles.

Properties of a Rectangle:

- The opposite sides of a rectangle are of equal length
- The opposite sides are parallel to each other
- All the interior angles of a rectangle are at 90 degrees.
- The diagonals of a rectangle bisect each other.

RHOMBUS

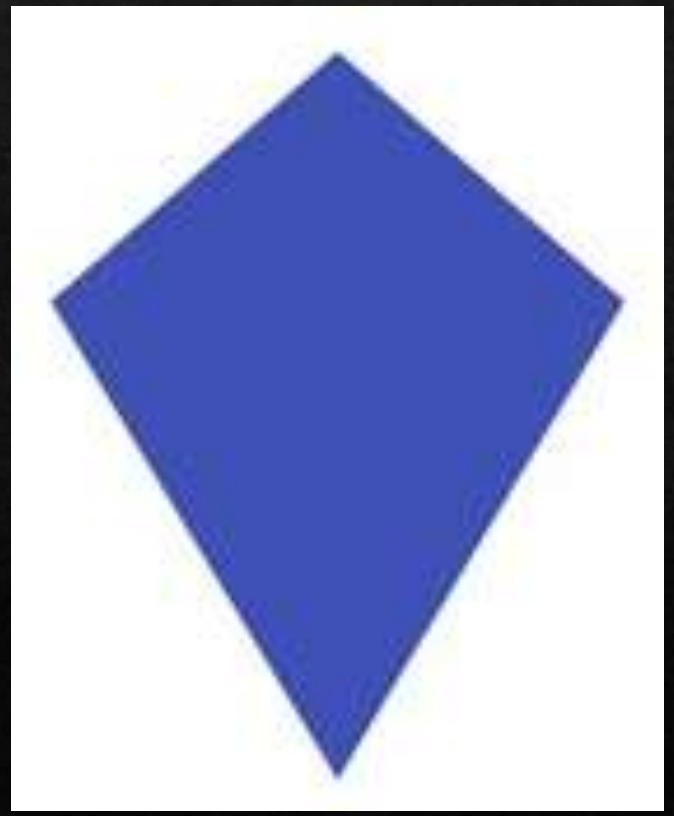
- It is a special case of a parallelogram, whose diagonals intersect each other at 90 degrees. The shape of a rhombus is in a diamond shape. Hence, it is also called a diamond



Properties of Rhombus:

- All the four sides of a rhombus are of the same measure
- The opposite sides of the rhombus are parallel to each other
- The opposite angles are of the same measure
- The sum of any two adjacent angles of a rhombus is equal to 180 degrees
- The diagonals perpendicularly bisect each other

KITE



- A kite is a special sort of quadrilateral, in which 2 pairs of adjacent sides are equal to each other.

Properties of a Kite:

- The pair of adjacent sides of a kite are of the same length
- The largest diagonal of a kite bisect the smallest diagonal
- Only one pair of opposite angles are of the same measure.

DIFFERENCIATION BETWEEN THE TYPES

WE CAN DIFFERENCIATE BERTWEEN THE QUADRILATERALS BY THERE PROPERTIES IN THE TABLE BELOW.
(KITE IS NOT INCLUDED IN THE TABLE)

	SQAURE	RECTANGLE	RHOMBUS	PARALLELOGRAM	TRAPEZIUM
ALL SIDES ARE EQUAL	YES	NO	YES	NO	NO
OPP. SIDES ARE PARALLEL	YES	YES	YES	YES	YES
OPP. SIDES ARE EQUAL	YES	YES	YES	YES	NO
ALL ANGLES OF SAME MEASURE	YES	YES	NO	NO	NO
OPP. ANGLES OF EQUAL MEASURE	YES	YES	YES	YES	NO
DIAGONALS BISECT EACH OTHER	YES	YES	YES	YES	NO
TWO ADJACENT ANGLES ARE SUPPLEMENTARY	YES	YES	YES	YES	NO


Thank you