



CLASS VIII: Maths
Chapter 3: Understanding Quadrilaterals

Questions and Solutions | Exercise 3.4 - NCERT Books

Q1 :

State whether True or False.

- (a) All rectangles are squares.
- (b) All rhombuses are parallelograms.
- (c) All squares are rhombuses and also rectangles.
- (d) All squares are not parallelograms.
- (e) All kites are rhombuses.
- (f) All rhombuses are kites.
- (g) All parallelograms are trapeziums.
- (h) All squares are trapeziums.

Answer :

- (a) False. All squares are rectangles but all rectangles are not squares.
- (b) True. Opposite sides of a rhombus are equal and parallel to each other.
- (c) True. All squares are rhombuses as all sides of a square are of equal lengths. All squares are also rectangles as each internal angle measures 90° .
- (d) False. All squares are parallelograms as opposite sides are equal and parallel.



- (e) False. A kite does not have all sides of the same length.
- (f) True. A rhombus also has two distinct consecutive pairs of sides of equal length.
- (g) True. All parallelograms have a pair of parallel sides.
- (h) True. All squares have a pair of parallel sides.

Q2 :

Identify all the quadrilaterals that have

- (a) four sides of equal length**
- (b) four right angles**

Answer :

- (a) Rhombus and Square are the quadrilaterals that have 4 sides of equal length.
- (b) Square and rectangle are the quadrilaterals that have 4 right angles.

Q3 :

Explain how a square is.

- (i) a quadrilateral**
- (ii) a parallelogram**
- (iii) a rhombus**
- (iv) a rectangle**

Answer :

- (i) A square is a quadrilateral since it has four sides.
- (ii) A square is a parallelogram since its opposite sides are parallel to each other.



- (iii) A square is a rhombus since its four sides are of the same length.
- (iv) A square is a rectangle since each interior angle measures 90° .

Q4 :

Name the quadrilaterals whose diagonals.

- (i) bisect each other**
- (ii) are perpendicular bisectors of each other**
- (iii) are equal**

Answer :

- (i) The diagonals of a parallelogram, rhombus, square, and rectangle bisect each other.
- (ii) The diagonals of a rhombus and square act as perpendicular bisectors.
- (iii) The diagonals of a rectangle and square are equal.

Q5 :

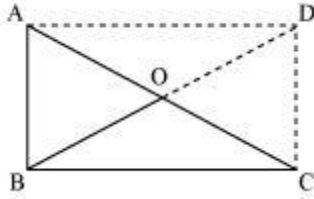
Explain why a rectangle is a convex quadrilateral.

Answer :

In a rectangle, there are two diagonals, both lying in the interior of the rectangle. Hence, it is a convex quadrilateral.

Q6 :

ABC is a right-angled triangle and O is the mid point of the side opposite to the right angle. Explain why O is equidistant from A, B and C. (The dotted lines are drawn additionally to help you).



Answer :

Draw lines AD and DC such that $AD \parallel BC$, $AB \parallel DC$

$AD = BC$, $AB = DC$

ABCD is a rectangle as opposite sides are equal and parallel to each other and all the interior angles are of 90° .

In a rectangle, diagonals are of equal length and also these bisect each other.

Hence, $AO = OC = BO = OD$

Thus, O is equidistant from A, B, and C.