



ST. MARY'S CO-ED SCHOOL, HARDA

[2020-21]

CLASS- VI

SUBJECT- MATHS

CHAPTER- 17

QUADRILATERALS

EXERCISE 17 – A

Question 1:

In the adjacent figure, a quadrilateral has been shown.

Name: (i) its diagonals,

(ii) two pairs of opposite sides,

(iii) two pairs of opposite angles,

(iv) two pairs of adjacent sides,

(v) two pairs of adjacent angles.

ANSWER:

(i) The diagonals are AC and BD.

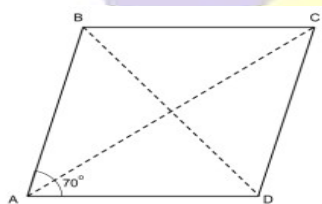
(ii) AB and CD, and AD and BC are the two pairs of opposite sides.

(iii) $\angle A$ and $\angle C$, and $\angle B$ and $\angle D$ are the two pairs of opposite angles.

(iv) AB and BC, and AD and DC are the two pairs of adjacent sides.

(v) $\angle A$ and $\angle B$, and $\angle C$ and $\angle D$ are the two pairs of adjacent angles.

Question 2: Draw a parallelogram ABCD in which $AB = 6.5$ cm, $AD = 4.8$ cm and $\angle BAD = 70^\circ$. Measure its diagonals.



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ANSWER:

Since ABCD is a parallelogram, $AB = DC = 6.5$ cm and $AD = BC = 4.8$ cm.

Given:

$$\angle A = 70^\circ$$

Steps of construction :

- 1) Draw AD equal to 4.8 cm.
- 2) Make an angle of 70° at A and cut an arc of 6.5 cm. Name it B.
- 3) Cut an arc of 4.8 cm from B and 6.5 cm from D. Name it C.
- 4) Join AB, BC and CD.
- 5) Measuring the diagonals AC and BD, we get AC equal to 9.2 cm and BD equal to 6.6 cm.

Question 3:

Two sides of a parallelogram are in the ratio 4 : 3. If its perimeter is 56 cm, find the lengths of its sides.

ANSWER:

Two sides of a parallelogram are in the ratio 4:3.

Let the two sides be $4x$ and $3x$.

In a parallelogram, opposite sides are equal and parallel. So, they are also in the ratio of 4:3, i.e. $4x$ and $3x$.

$$\text{Perimeter} = 4x + 3x + 4x + 3x$$

$$56 = 14x$$

$$x = 56 / 14$$

$$x = 4$$

$$\therefore 4x = 16$$

$$3x = 12$$

Length of its sides are 16cm, 12 cm, 16cm and 12cm.

Question 4:

Name each of the following parallelograms:

- (i) The diagonals are equal and the adjacent sides are unequal.
- (ii) The diagonals are equal and the adjacent sides are equal.
- (iii) The diagonals are unequal and the adjacent sides are equal.

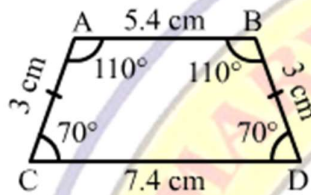
ANSWER:

- (i) Rectangle
- (ii) Square
- (iii) Rhombus

Question 5:

What is a trapezium? When do you call a trapezium an isosceles trapezium?
Draw an isosceles trapezium. Measure its sides and angles.

ANSWER:



A trapezium has only one pair of parallel sides.

A trapezium is said to be an isosceles trapezium if its non-parallel sides are equal.

Following are the measures of the isosceles trapezium:

AB = 5.4 cm

BC = 3 cm

DC = 7.4 cm

AD = 3 cm

$\angle A = \angle B = 110^\circ$ $\angle D = \angle C = 70^\circ$ $\angle A = \angle B = 110^\circ$ $\angle D = \angle C = 70^\circ$

Question 6:

Which of the following statements are true and which are false?

- (a) The diagonals of a parallelogram are equal.
- (b) The diagonals of a rectangle are perpendicular to each other.
- (c) The diagonals of a rhombus are equal.

ANSWER:

(a) False

(b) False

(c) False

Question 7:

Give reasons for the following:

- (a) A square can be thought of as a special rectangle.
- (b) A square can be thought of as a special rhombus.
- (c) A rectangle can be thought of as a special parallelogram.
- (d) a square is also a parallelogram.

ANSWER:

- (a) This is because a rectangle with equal sides becomes a square.
- (b) This is because a rhombus with each angle a right angle becomes a square.
- (c) This is because a parallelogram with each angle a right angle becomes a rectangle.
- (d) This is because in a square opposite sides are parallel.

Question 8:

A figure is said to be regular if its sides are equal in length and angles are equal in measure. What do you mean by a regular quadrilateral?

ANSWER:

A square is a regular quadrilateral all of whose sides are equal in length and all of whose angles are equal in measure.

EXERCISE 17 - B

Question 1:

The sum of all the angles of a quadrilateral is

- (a) 180°
- (b) 270°
- (c) 360°
- (d) 400°

ANSWER:

- (c) 360°

Question 2:

The three angles of a quadrilateral are 80° , 70° and 120° . The fourth angle is

- (a) 110°
- (b) 100°
- (c) 90°
- (d) 80°

ANSWER:

- (c) 90°

Question 3:

The angles of a quadrilateral are in the ratio 3 : 4 : 5 : 6. The largest of these angles is

- (a) 90°
- (b) 120°
- (c) 150°
- (d) 102°

ANSWER: (b) 120°

Question 4:

A quadrilateral having one and only one pair of parallel sides is called

- (a) a parallelogram
- (b) a kite
- (c) a rhombus
- (d) a trapezium

ANSWER:

- (d) a trapezium

Question 5:

A quadrilateral whose opposite sides are parallel is called

- (a) rhombus
- (b) a kite
- (c) a trapezium
- (d) a parallelogram

ANSWER:

(d) a parallelogram

Question 6:

An isosceles trapezium has

- (a) equal parallel sides
- (b) equal nonparallel sides
- (c) equal opposite sides
- (d) none of these

ANSWER:

(b) equal nonparallel sides

Question 8:

A square has

- (a) all sides equal and diagonals unequal
- (b) all sides equal and diagonals equal
- (c) all sides unequal and diagonals equal
- (d) none of these

ANSWER:

(b) all sides equal and diagonals equal

Question 9:

A quadrilateral having two pairs of equal adjacent sides but unequal opposite sides, is called a

- (a) trapezium
- (b) parallelogram
- (c) kite
- (d) rectangle

ANSWER:

(c) kite

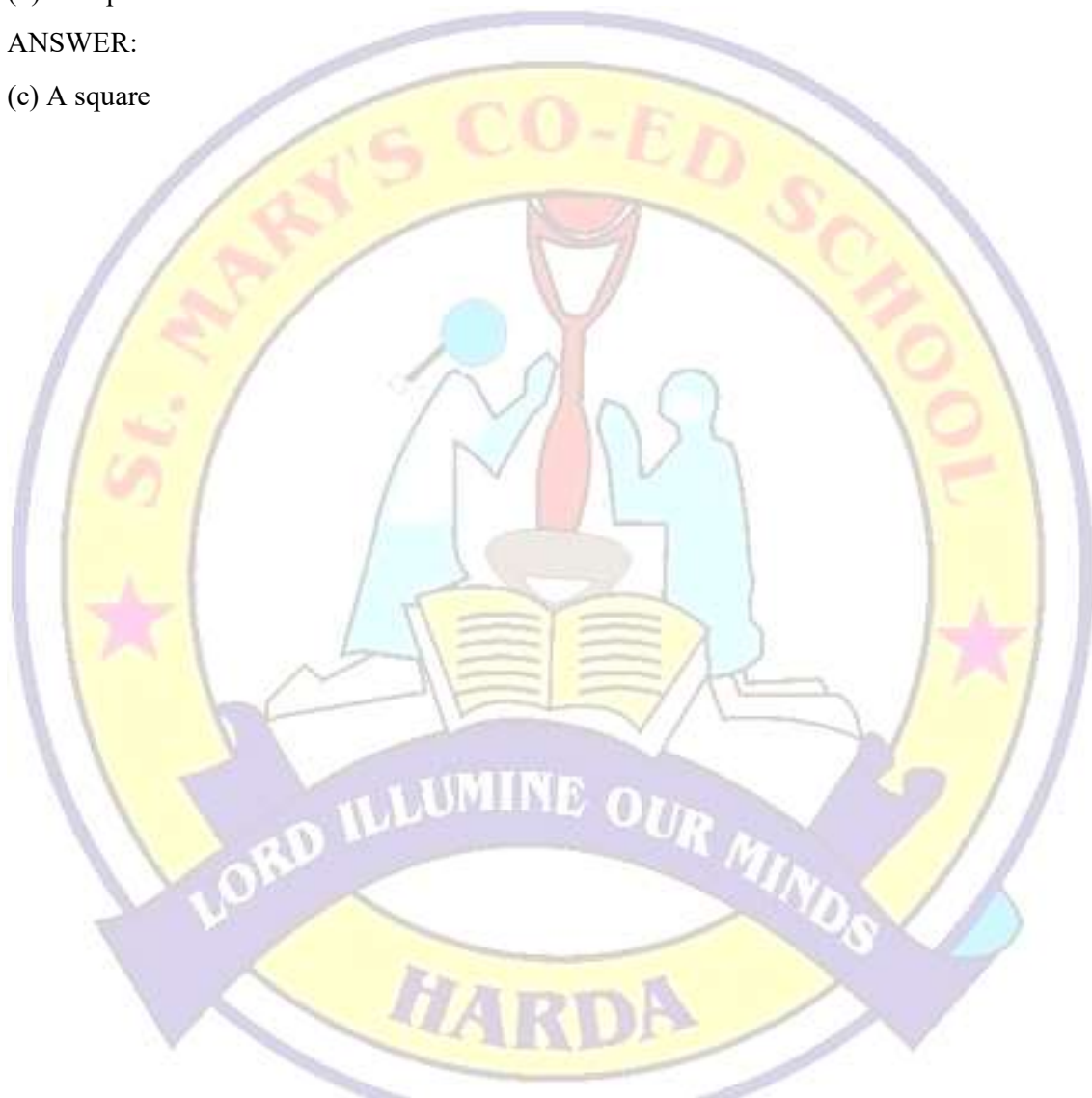
Question 10:

What do you mean by a regular quadrilateral?

- (a) A rectangle
- (b) A rhombus
- (c) A square
- (d) A trapezium

ANSWER:

- (c) A square



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