



Exercise 15A

Q1.

Answer :

(i) 4

(ii) 4

(iii) 4, co-linear

(iv) 2

(v) opposite

(vi) 360°

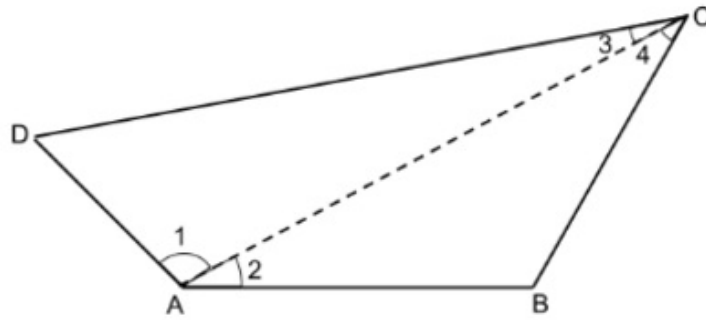
Q2.

Answer :

- (i) There are four pairs of adjacent sides, namely (AB,BC) , (BC,CD) , (CD,DA) and (DA,AB) .
- (ii) There are two pairs of opposite sides, namely (AB,DC) and (AD,BC) .
- (iii) There are four pairs of adjacent angles, namely $\angle A, \angle B$, $\angle B, \angle C$, $\angle C, \angle D$ and $\angle D, \angle A$.
- (iv) There are two pairs of opposite angles, namely $\angle A, \angle C$ and $\angle B, \angle D$.
- (v) There are two diagonals, namely AC and BD .

Q3.

Answer :



Let $ABCD$ be a quadrilateral.
Join A and C .

Now, we know that the sum of the angles of a triangle is 180° .

$$\text{For } \triangle ABC: \angle 2 + \angle 4 + \angle B = 180^\circ \quad \dots (1)$$

$$\text{For } \triangle ADC: \angle 1 + \angle 3 + \angle D = 180^\circ \quad \dots (2)$$

For $\triangle ADC$:

$$\angle 1 + \angle 3 + \angle D = 180^\circ \quad \dots (2)$$

Adding (1) and (2):

$$(\angle 1 + \angle 2 + \angle 3 + \angle 4) + \angle B + \angle D = 360^\circ$$

$$\text{or } \angle A + \angle B + \angle C + \angle D = 360^\circ$$

Hence, the sum of all the angles of a quadrilateral is 360° .

Q4.

Answer :

Sum of all the four angles of a quadrilateral is 360° .

$$\text{Let the unknown angle be } x^\circ. 76 + 54 + 108 + x = 360 \quad 238 + x = 360 \quad x = 122$$

The fourth angle measures 122° .

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