

Solutions for Class 9 Maths Chapter 14 Quadrilaterals

Exercise 14.3

Question 1: In a parallelogram ABCD, determine the sum of angles $\angle C$ and $\angle D$.

Solution:

In a parallelogram ABCD, $\angle C$ and $\angle D$ are consecutive interior angles on the same side of the transversal CD.

$$\text{So, } \angle C + \angle D = 180^\circ$$

Question 2: In a parallelogram ABCD, if $\angle B = 135^\circ$, determine the measures of its other angles.

Solution:

Given: In a parallelogram ABCD, if $\angle B = 135^\circ$

Here, $\angle A = \angle C$, $\angle B = \angle D$ and $\angle A + \angle B = 180^\circ$

$$\angle A + 135^\circ = 180^\circ$$

$$\angle A = 45^\circ$$

Answer:

$$\angle A = \angle C = 45^\circ$$

$$\angle B = \angle D = 135^\circ$$

Question 3: ABCD is a square. AC and BD intersect at O. State the measure of $\angle AOB$.

Solution:

We know, diagonals of a square bisect each other at right angle.

$$\text{So, } \angle AOB = 90^\circ$$

Question 4: ABCD is a rectangle with $\angle ABD = 40^\circ$. Determine $\angle DBC$.

Solution:

Each angle of a rectangle = 90°

$$\text{So, } \angle ABC = 90^\circ$$

$$\angle ABD = 40^\circ \text{ (given)}$$

$$\text{Now, } \angle ABD + \angle DBC = 90^\circ$$

$$40^\circ + \angle DBC = 90^\circ$$

$$\text{or } \angle DBC = 50^\circ .$$