

### Exercise 14.3

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**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 =  $90^\circ$

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

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

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

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

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