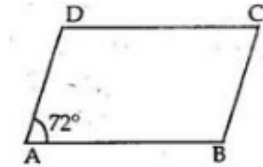




### Exercise 9B

Question 1:



In a parallelogram, opposite angles are equal.

$$\therefore \angle A = \angle C = 72^\circ$$

The sum of all the four angles of a parallelogram is  $360^\circ$

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

$$\Rightarrow 72^\circ + \angle B + 72^\circ + \angle D = 360^\circ \quad [\because \angle A = \angle C]$$

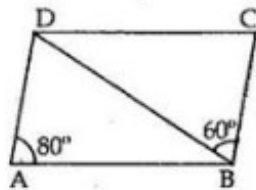
$$\Rightarrow 2\angle B + 144^\circ = 360^\circ \quad [\because \angle B = \angle D]$$

$$\Rightarrow 2\angle B = 360^\circ - 144^\circ = 216^\circ$$

$$\Rightarrow \angle B = \frac{216}{2} = 108^\circ$$

$$\therefore \angle B = 108^\circ, \angle C = 72^\circ \text{ and } \angle D = 108^\circ.$$

Question 2:



ABCD is a parallelogram,  
so opposite angles are equal.

$$\therefore \angle C = \angle A = 80^\circ$$

As  $AD \parallel BC$  and  $BD$  is a transversal.

$$\text{So, } \angle ADB = \angle DBC = 60^\circ$$

[Alternate angles]

In  $\triangle ABD$

$$\angle A + \angle ADB + \angle ABD = 180^\circ$$

$$\Rightarrow 80^\circ + 60^\circ + \angle ABD = 180^\circ$$

$$\Rightarrow 140^\circ + \angle ABD = 180^\circ$$

$$\Rightarrow \angle ABD = 180^\circ - 140^\circ = 40^\circ$$

$$\therefore \begin{aligned} \angle ABC &= \angle ABD + \angle DBC \\ &= 40^\circ + 60^\circ = 100^\circ \end{aligned}$$

In a parallelogram, opposite angles are equal.

$$\text{So, } \angle ADC = \angle ABC = 100^\circ$$

$$\therefore \begin{aligned} \angle CDB &= \angle ADC - \angle ADB \\ &= 100^\circ - 60^\circ = 40^\circ \end{aligned}$$

$$\text{and } \angle ADB = 60^\circ.$$

\*\*\*\*\* END \*\*\*\*\*

