



Exercise 9B

Question 7:

Lets ABCD be the given parallelogram.

If $\angle A$ is smallest angle, then the greater angle

$$\Rightarrow \angle B = 2\angle A - 30^\circ$$

In a parallelogram, the opposite angles are equal

$$\Rightarrow \angle A = \angle C \text{ and } \angle B = \angle D = 2\angle A - 30^\circ$$

The sum of all the four angles of a parallelogram is 360° .

$$\Rightarrow \angle A + \angle B + \angle C + \angle D = 360^\circ$$

$$\Rightarrow \angle A + (2\angle A - 30^\circ) + \angle A + (2\angle A - 30^\circ) = 360^\circ$$

$$\Rightarrow \angle A + 2\angle A - 30^\circ + \angle A + 2\angle A - 30^\circ = 360^\circ$$

$$\Rightarrow 6\angle A - 60^\circ = 360^\circ$$

$$\Rightarrow 6\angle A = 360^\circ + 60^\circ = 420^\circ$$

$$\Rightarrow \angle A = \frac{420^\circ}{6} = 70^\circ$$

$$\therefore \angle A = 70^\circ \Rightarrow \angle C = 70^\circ$$

$$\angle B = (2\angle A - 30^\circ) = (2 \times 70^\circ - 30^\circ) = 110^\circ$$

$$\angle D = \angle B = 110^\circ$$

$$\therefore \angle A = \angle C = 70^\circ \text{ and } \angle B = \angle D = 110^\circ.$$

Question 8:

Perimeter of a parrallelogram ABCD

$$= AB + BC + CD + DA$$

$$= 9.5 + BC + 9.5 + BC$$

[\therefore ABCD is a parrallelogram and its opposite sides are equal

i.e. $AB = CD$ and $BC = DA$]

$$30 = 19 + 2BC$$

[Perimeter = 30 cm(given)]

$$\Rightarrow 2BC = 30 - 19 = 11$$

$$\Rightarrow BC = \frac{11}{2} = 5.5 \text{ cm}$$

$$\therefore AB = 9.5 \text{ cm}, BC = 5.5 \text{ cm}, CD = 9.5 \text{ cm}, DA = 5.5 \text{ cm}.$$

***** END *****