

Quadrilaterals Ex 14.2 Q2

Answer:

Let one of the angle of the parallelogram as χ^0

Then the adjacent angle becomes $\frac{2}{3}x^0$

We know that the sum of adjacent angles of the parallelogram is supplementary.

$$x + \frac{2}{3}x = 180$$

$$\frac{5}{3}x = 180$$

$$x = 180\left(\frac{3}{5}\right)$$

$$x = \boxed{108^{\circ}}$$

Thus, the angle adjacent to $108^{\rm o}$

$$=\frac{2}{3}(108^{\circ})$$
$$=\boxed{72^{\circ}}$$

Since, opposite angles of a parallelogram are equal.

Therefore, the four angles in sequence are 108° , 72° , 108° and 72°

Quadrilaterals Ex 14.2 Q3

Answer:

Let the smallest angle of the parallelogram be χ^0

Therefore, according to the given statement other angle becomes $(2x-24)^0$.

Also, the opposite angles of a parallelogram are equal.

Therefore, the four angles become x^0 , $(2x-24)^0$, x^0 and $(2x-24)^0$.

According to the angle sum property of a quadrilateral:

$$x^{0} + (2x - 24)^{0} + x + (2x - 24)^{0} = 360^{0}$$

$$6x^{0} - 48^{0} = 360^{0}$$

$$6x^{0} = 360^{0} + 48^{0}$$

$$6x^{0} = 408^{0}$$

$$x^{0} = \frac{408^{0}}{6}$$

Thus, the other angle becomes

$$= \left[2(68) - 24\right]^0$$
$$= \left[112^0\right]$$

Hence, the four angles of the parallelogram are $\boxed{68^{\circ}}$, $\boxed{112^{\circ}}$, $\boxed{68^{\circ}}$ and $\boxed{112^{\circ}}$