Quadrilaterals Ex 14.2 Q2

Answer :

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

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

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

Therefore,

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

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

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

$$x=\boxed{108^0}$$

Thus, the angle adjacent to 108^0

$$=\frac{2}{3}(108^0)$$

$$=\boxed{72^0}$$

Since, opposite angles of a parallelogram are equal.

Therefore, the four angles in sequence are $\boxed{108^0}$, $\boxed{72^0}$, $\boxed{108^0}$ and $\boxed{72^0}$.

Quadrilaterals Ex 14.2 Q3

Answer :

Let the smallest angle of the parallelogram be x^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:

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

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

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

$$6x^0=408^0$$

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

$$x^0=\boxed{68^0}$$

Thus, the other angle becomes

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

$$=\boxed{112^0}$$

Hence, the four angles of the parallelogram are $\boxed{68^0}$, $\boxed{112^0}$, $\boxed{68^0}$ and $\boxed{112^0}$.

********** END **********