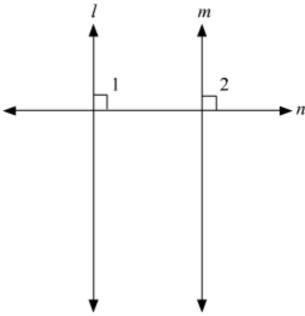


Lines and Angles Ex 8.4 Q14

Answer:

The figure can be drawn as follows:



Here, $l \perp n$ and $m \perp n$.

We need to find the relation between lines l and m It is given that $l \perp n$, therefore,

$$\angle 1 = 90^{\circ}$$
 (i)

Similarly, we have $m \perp n$, therefore,

$$\angle 2 = 90^{\circ}$$
 (ii)

From (i) and (ii), we get:

 $\angle 1 = \angle 2$

But these are the pair of corresponding angles.

Theorem states: If a transversal intersects two lines in such a way that a pair of corresponding angles is equal, then the two lines are parallel.

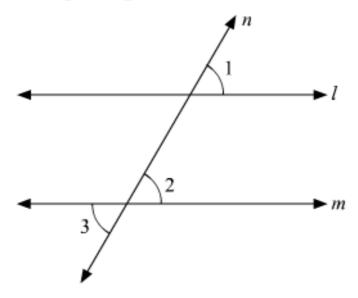
Thus, we can say that $l \parallel m$

Hence, the lines are parallel to each other.

Lines and Angles Ex 8.4 Q15

Answer:

The figure is given as follow:



It is given that $\angle 1 = 60^{\circ}$

Also,

$$\angle 2 = \frac{2}{3}(90^{\circ})$$

$$\angle 2 = 2(30^{\circ})$$

$$\angle 2 = 60^{\circ}$$

Thus we have $\angle 1 = \angle 2$

But these are the pair of corresponding angles.

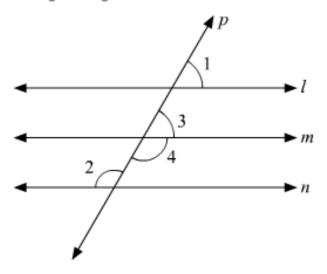
Thus $l \parallel m$

Hence proved.

Lines and Angles Ex 8.4 Q16

Answer:

The given figure is as follows:



We have $l \parallel m \parallel n$ and $\angle 1 = 60^{\circ}$

Thus, we get $\angle 1$ and $\angle 3$ as corresponding angles.

Therefore,

$$\angle 3 = \angle 1$$

$$\angle 3 = 60^{\circ}$$
 (i)

We have ∠3 and ∠4 forming a linear pair.

Therefore, they must be supplementary. That is;

$$\angle 3 + \angle 4 = 180^{\circ}$$

From equation (i):

$$60^{\circ} + \angle 4 = 180^{\circ}$$

$$\angle 4 = 180^{\circ} - 60^{\circ}$$

$$\angle 4 = 120^{\circ}$$
 (ii)

We have $m \parallel n$

Thus, we get $\angle 2$ and $\angle 4$ as alternate interior opposite angles.

Therefore, these must be equal. That is,

$$\angle 2 = \angle 4$$

From equation (ii), we get :

$$\angle 2 = 120^{\circ}$$

Hence the required value for $\angle 2$ is $\boxed{120^{0}}$

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