

Practical Geometry - Exercise 4.3

Q.1 Construct the following quadrilaterals.

(i) Quadrilateral MORE

MO = 6 cm

OR = 4.5 cm

$\angle M = 60^\circ$

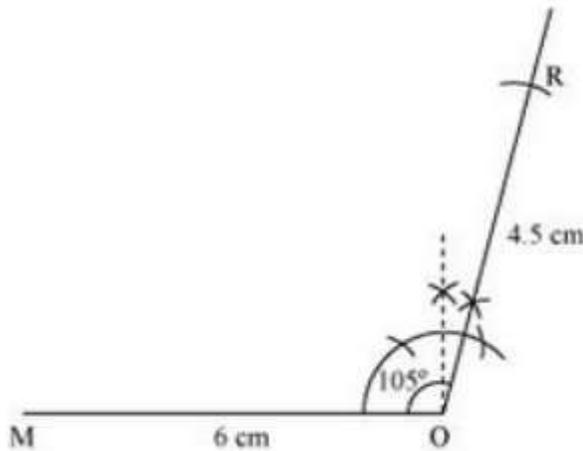
$\angle O = 105^\circ$

$\angle R = 105^\circ$

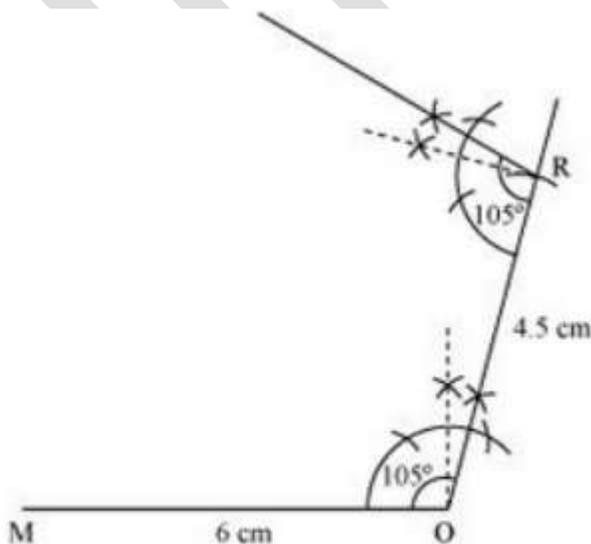
Sol. Step for construction:

Step 1: Firstly, draw a line segment $MO = 6$ cm and make an angle of measure 105° at point O.

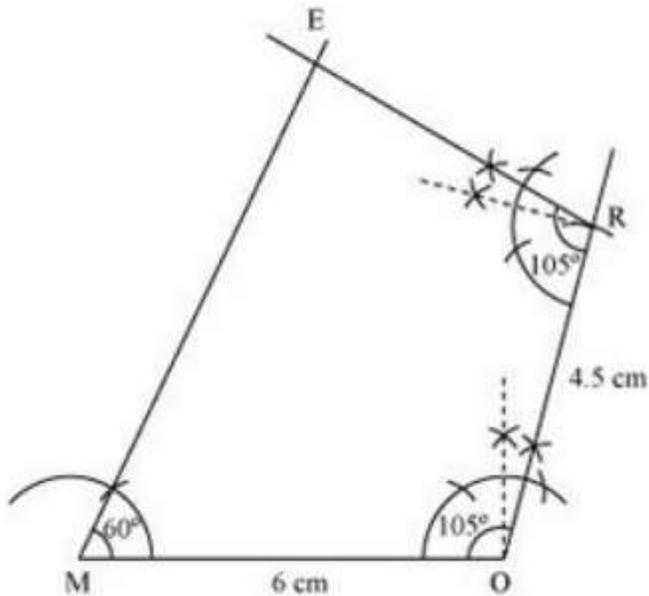
Step 2: Now, take point O as centre and mark an arc OR of radius 4.5 cm on the angle ray.



Step 3: Now, again draw an angle of 105° at point R.



Step 4: Draw an angle of measure 60° at point M which intersects the ray drawn in previous step 3 at point E.



Thus, MORE is the required quadrilateral.

(ii) Quadrilateral PLAN

PL = 4 cm

LA = 6.5 cm

$\angle P = 90^\circ$

$\angle A = 110^\circ$

$\angle N = 85^\circ$

Sol. Since, two side of quadrilaterals PLMN are given i.e. PL and LA. So, we need to find out the angle at point L

As we know that sum of angles of a quadrilateral = 360° .

So, $\angle P + \angle L + \angle A + \angle N = 360^\circ$.

$90^\circ + \angle L + 110^\circ + 85^\circ = 360^\circ$

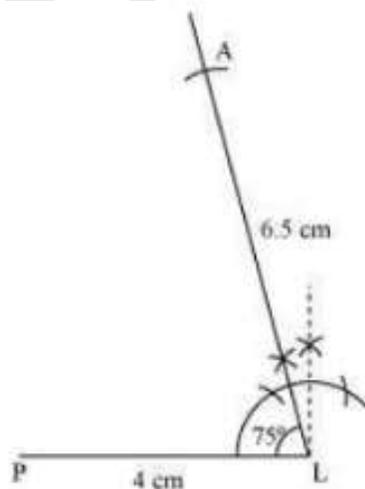
So, $\angle L = 75^\circ$

Steps for Construction:

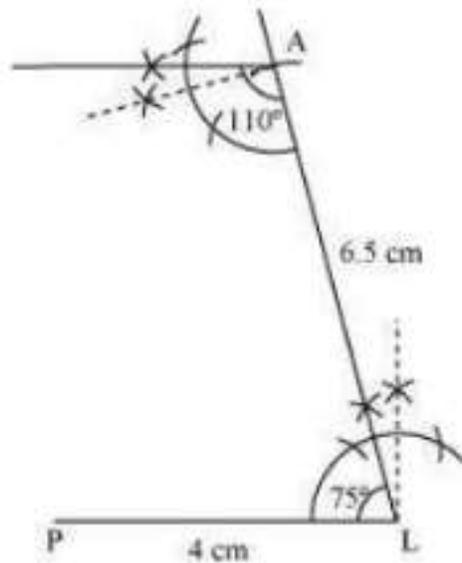
Step 1: Firstly, draw a line segment PL = 4 cm with help of pencil and ruler.

Step 2: Now, draw an angle of 75° at point L with help of compass.

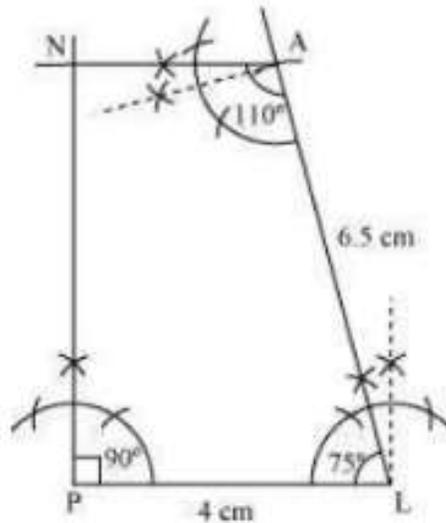
Step 3: Mark an arc LA of radius 6.5 cm from point L on angle ray.



Step 4: Now, make an angle of 110° at point A with help of compass.



Step 5: Now from point P, draw an angle of 90° . This ray will intersect the ray from point A at point N.



Thus, PLAN is the required quadrilateral.

(iii) Parallelogram HEAR

HE = 5 cm

EA = 6 cm

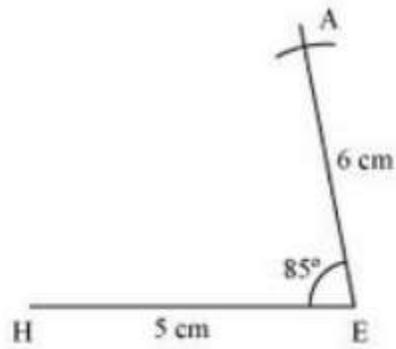
$\angle R = 85^\circ$

Sol. Since, HEAR is a parallelogram. So $HE = AR = 5$ cm and $EA = HR = 6$ cm

Steps of Construction:

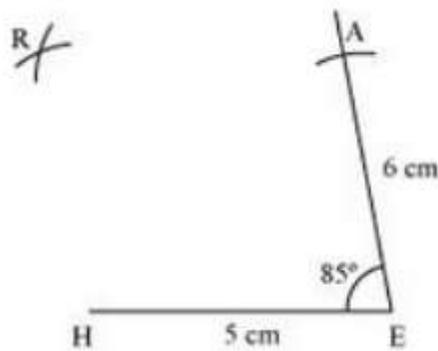
Step 1: Firstly, draw a line segment $HE = 5$ cm and an angle of 85° at point E with help of compass.

Step 2: Now, take E as centre and mark an arc EA of radius 6 cm from this ray at Point A.

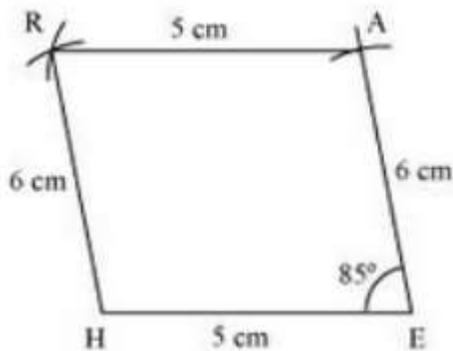


Step 3: Take H as centre and mark an arc of radius 6 cm on the opposite side of point E.

Step 4: Now, draw another arc by taking A as centre of radius 5 cm, which intersects the previous drawn arc at point R.



Step 3: Join HR and AR.



Thus, HEAR is the required quadrilateral.

(iv) Rectangle OKAY

OK = 7 cm

KA = 5 cm

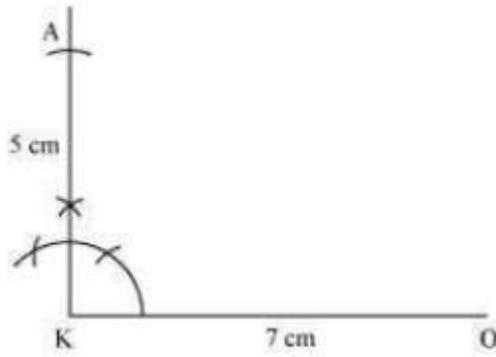
Sol. Since, OKAY is a rectangle. So, $OK = AY = 7\text{cm}$, $KA = OY = 5\text{ cm}$ and $\angle K = 90^\circ$

Steps of Construction:

Step 1: Firstly, draw a line segment $OK = 7\text{ cm}$ with help of pencil and ruler.

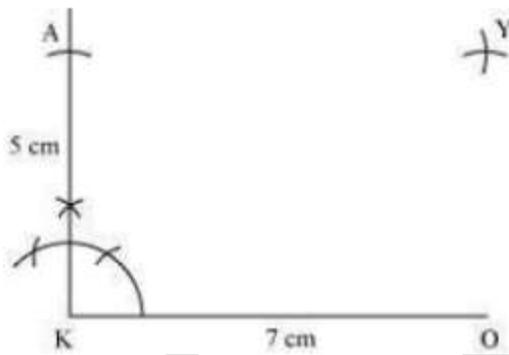
Step 2: Make an angle of 90° at point K with help of compass.

Step 3: Now, take point K as centre and mark an arc KA of radius 5 cm from this ray.

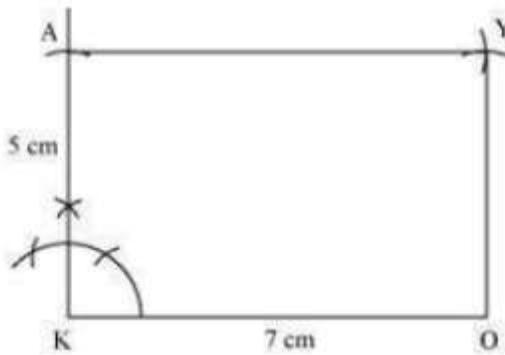


Step 4: Take O as centre and mark an arc of radius 5 cm on the opposite side of point K.

Step 5: Now, draw another arc by taking centre as A of radius 7 cm, which intersects the previously drawn arc at point Y.



Step 6: Join AY and OY.



Thus, OKAY is the required rectangle.