Class :- 8

Subject :- Maths

Chapter:- (4)

(Practical Geometry)

Exercise:- 4.3

Question:- (1)

Construct the following quadrilaterals:

(i) Quadrilateral MORE

MO = 6 cm, OR = 4.5 cm, $\angle M = 60°$, $\angle O = 105°$, $\angle R = 105°$

(ii) Quadrilateral PLAN

PL = 4 cm, LA = 6.5 cm, $\angle P = 90°$, $\angle A = 110°$, $\angle N = 85°$

(iii) Parallelogram HEAR

HE = 5 cm, EA = 6 cm, $\angle R = 85°$

(iv) Rectangle OKAY

OK = 7 cm, KA = 5 cm

Solution:-

(i)   **Given:** $MO = 6$ cm, $OR = 4.5$ cm, $\angle M = 60°$, $\angle O = 105°$, $\angle R = 105°$

To construct: A quadrilateral MORE.

Steps of construction:
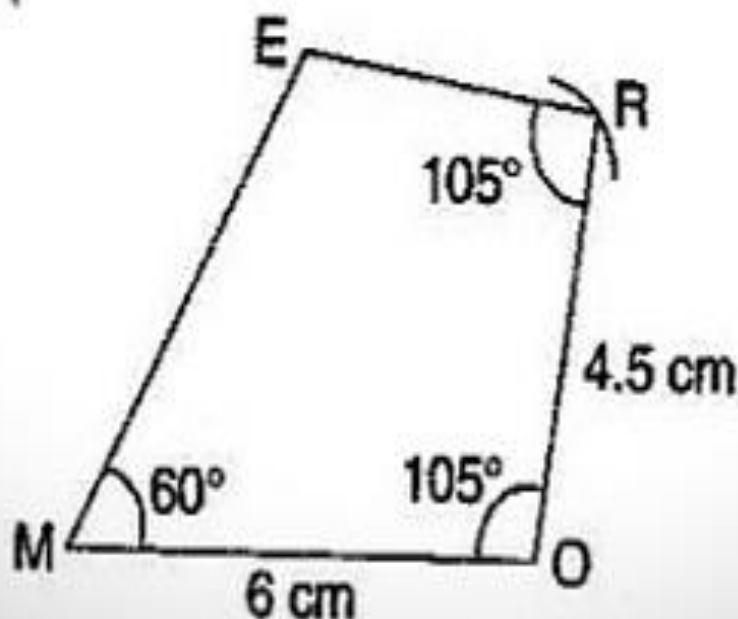
    (a) Draw a line segment $MO = 6$ cm.

    (b) Construct $\angle R = 105°$ and taking radius 4.5 cm, draw an arc taking O as centre, which intersects at R.

    (c) Also construct an angle $105°$ at R and produce the side RE.

    (d) Construct another angle of $60°$ at point M and produce the side ME. Both sides ME and RE intersect at E.

It is the required quadrilateral MORE.

E, R, 105°, 4.5 cm, 60°, 105°, M, O, 6 cm

(ii)   **Given:**   PL = 4 cm, LA = 6.5 cm, $\angle P = 90°$, $\angle A = 110°$, $\angle N = 85°$

To construct: A quadrilateral PLAN.

To find: $\angle L = 360° - (90° + 85° + 110°) = 360° - 285° = 75°$

Steps of construction:

   (a) Draw a line segment PL = 4 cm.

   (b) Construct angle of 90° at P and produce the side PN.

   (c) Construct angle of 75° at L and with L as centre, draw an arc of radius 6 cm, which intersects at A.

   (d) Construct $\angle A = 110°$ at A and produce the side AN which intersects PN at N.

It is the required quadrilateral PLAN.
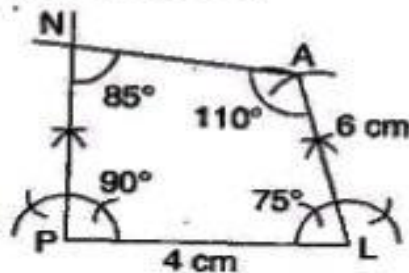
(iii)   **Given:**   HE = 5 cm, EA = 6 cm, $\angle R = 85°$

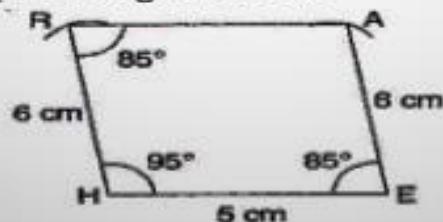**To construct:** A parallelogram HEAR.

To find: $\angle H = 180° - 85° = 95°$ [∵ Sum of adjacent angle of $\|^{gm}$ is 180°]

Steps of construction:

   (a) Draw a line segment HE = 5 cm.

   (b) Construct $\angle H = 95°$ and draw an arc of radius 6 cm with centre H. It intersects AR at R.

   (c) Join RH.

   (d) Draw $\angle R = \angle E = 85°$ and draw an arc of radius 6 cm with E as a centre which intersects RA at A.

   (e) Join RA

It is the required parallelogram HEAR.

(iv) **Given:** OK = 7 cm, KA = 5 cm

To construct: A rectangle OKAY.

Steps of construction:

(a) Draw a line segment OK = 7 cm.

(b) Construct angle 90° at both points O and K and produce these sides.

(c) Draw two arcs of radius 5 cm from points O and K respectively. These arcs intersect at Y and A.

(d) Join YA.

It is the required rectangle OKAY.