1. Let l be a line and P be a point not on l. Through P, draw a line m parallel to l. Now join P to any point Q on l. Choose any other point R on m. Through R, draw a line parallel to PQ. If this line meets l at S, then what shape do the two sets of parallel lines inclose?

Solution:

Steps of Construction:

(i) Draw a line l and P be a point not on the line l

(ii) Take a point A on line l and join PA

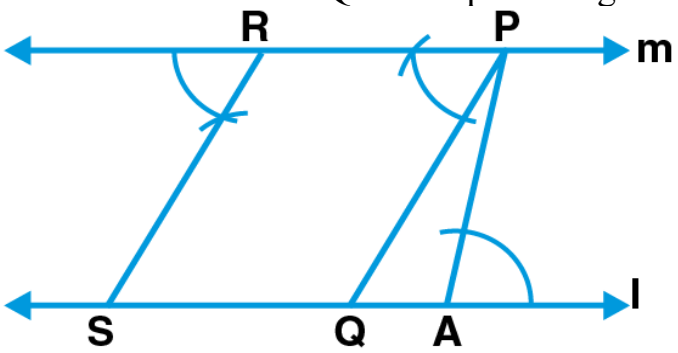
(iii) Draw a line m which is parallel to line l on point P

(iv) Take a point Q on line l and join PQ

(v) From a point R on line m, draw a line parallel to PQ which meets l at point S

Here,

We can observe that PQRS is a parallelogram



2. Construct a triangle ABC, given that

(i) AB = 5 cm, BC = 6 cm and AC = 7 cm

(ii) AB = 4.5 cm, BC = 5 cm and AC = 6 cm

Solution:

(i) Steps of Construction:

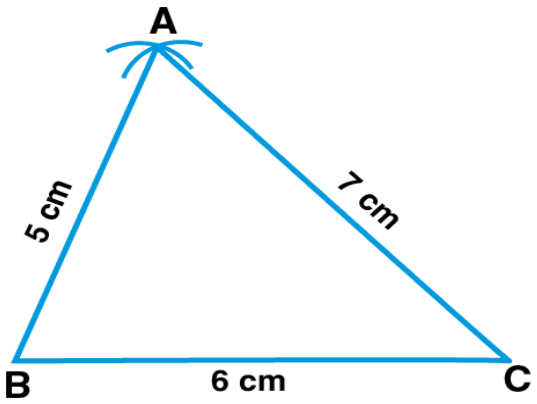
1. Draw a line segment BC such that BC = 6 cm

2. Taking B as centre and radius 5 cm and taking C as centre and radius 7 cm, draw arcs which intersect each other at point A

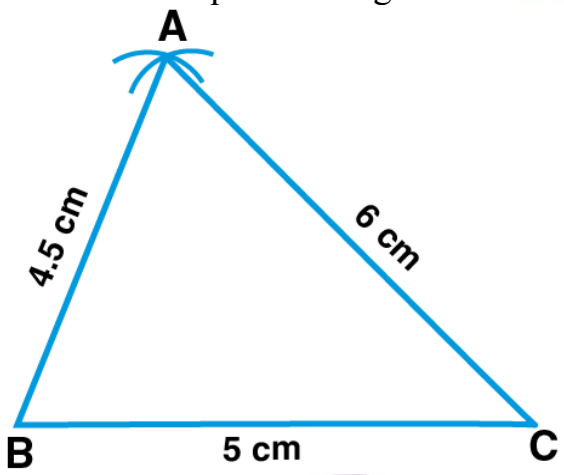
3. Now, join AB and AC

Therefore,

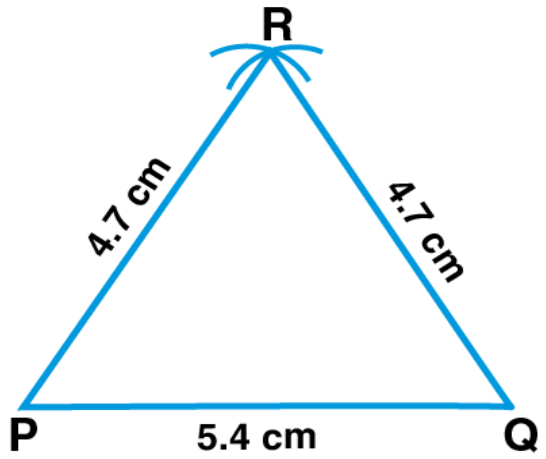
△ABC is the required triangle



(ii) Steps of Construction:
1. Draw a line segment BC such that BC = 5 cm
2. Taking B as centre and radius 4.5 cm and taking C as centre and radius 6 cm, draw arcs which intersect each other at point A
3. Now, join AB and AC
Therefore,
△ABC is the required triangle

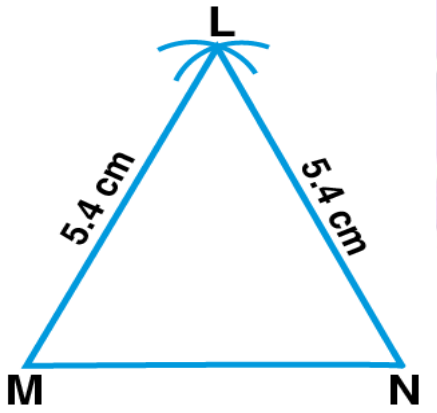


3. Construct a triangle PQR given that PQ = 5.4 cm, QR = PR = 4.7 cm. Name the triangle.
Solution:
Steps of Construction:
1. Draw a line segment PQ of length 5.4 cm
2. Taking P and Q as centres and radius 4.7 cm, draw two arcs intersecting each other at point R
3. Join PR and QR
Here, the two sides are equal of length 4.7 cm
Hence, the required △RPQ is an isosceles triangle



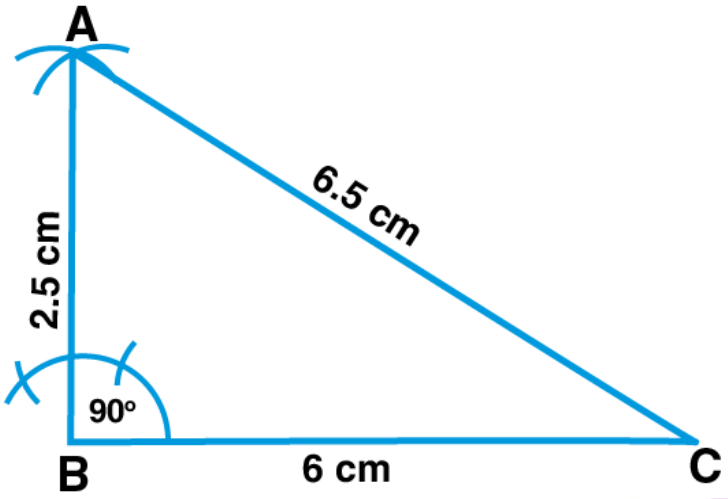
4. Construct a triangle LMN such that the length of each side is 5.4 cm. Name the triangle.
Solution:
Steps of Construction:
1. Draw a line segment MN such that MN = 5.4 cm
2. Taking M and N as centres and radius 5.4 cm, draw two arcs intersecting each other at point L

Here, we can observe that all the sides of triangle = 5.4 cm
Therefore,
The required △LMN is an equilateral triangle

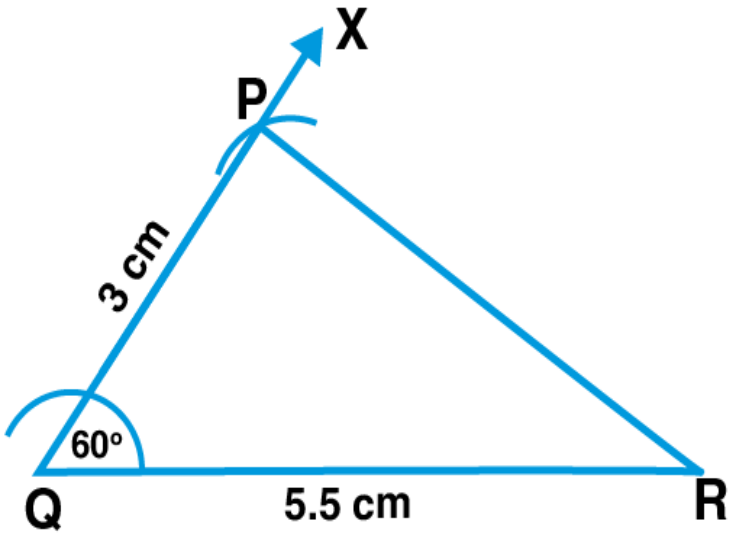


5. Construct a triangle ABC such that AB = 2.5 cm, BC = 6 cm and AC = 6.5 cm. Measure ∠ABC and name the triangle
Solution:
Steps of Construction:
1. Draw a line segment such that BC = 6 cm
2. Taking B as centre and radius 2.5 cm and taking C as centre and radius 6.5 cm, draw two arcs intersecting each other at point A

3. Join AB and AC
Now, the △ABC is the required triangle
On measuring, we get, ∠ABC = 90^0
Hence, △ABC is a right angled triangle



6. Construct a triangle PQR, given that PQ = 3 cm, QR = 5.5 cm and ∠PQR = 60^0
Solution:
Steps of Construction:
1. Draw a line segment QR of length 5.5 cm
2. Taking Q as centre, draw a ray QX making an angel of 60^0
3. Now, cut off PQ = 3 cm
4. Join PR
Therefore,
△PQR is the required triangle



7. Construct △DEF such that DE = 5 cm, DF = 3 cm and ∠EDF = 90^0

Solution:

Steps of Construction:

1. Draw a line segment DE of length 5 cm
2. Taking D as centre, draw a ray DX making an angle of 90^0
3. Now, cut off DF = 3 cm
4. Join FE

△FDE is the required triangle