

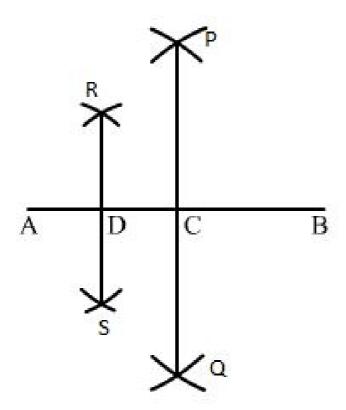
## Geometrical Constructions Ex 19.3 Q5 Answer:

Draw a line segment AB of length 10 cm and bisect it.

- (i) With A as centre and radius more than half of AB, draw arcs on both sides of AB.
- (ii) With the same radius and B as centre, draw arcs cutting the arcs of step (i) at P and Q, respectively.
- (iii) Join P and Q. Line PQ intersects line AB at C.
- (iv) With A as centre and radius more than half of AC, draw arcs on both sides of AB.
- (v) With the same radius and C as centre, draw arcs cutting the arcs of step (iv) at R and S, respectively.
- (vi) Join R and S.

Line RS intersects AC at D.

If we measure AD with the ruler, we have AD = 2.5 cm



Geometrical Constructions Ex 19.3 Q6

## Answer:

Draw a line segment AB.

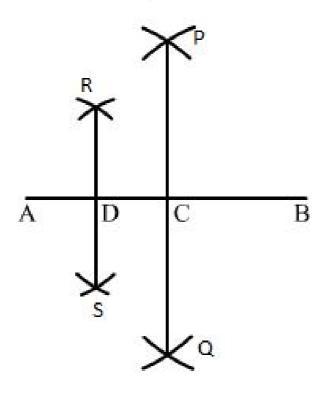
- (i) With A as centre and radius more than half of AB, draw arcs on both sides of AB.
- (ii) With the same radius and B as centre, draw arcs cutting the arcs drawn in step (i) at P and Q.
- (iii) Join P and Q. PQ intersects AB at C.
- (iv) With A as centre and radius more than half of AC, draw arcs on both sides of AC.
- (v) With the same radius and C as centre, draw arcs cutting the arcs drawn in step (iv) at R and S.
- (vi) Join R and S. RS intersects AB at D.

Now, AC and CB are equal.

Both are  $\frac{1}{2}$  (AB).

Again, divide AC at D.

So, AD and AC are of same length, i.e.,  $\frac{1}{4}$  (AB).



## Geometrical Constructions Ex 19.3 Q7

## Answer:

Draw a line segment AB using the ruler.

- (i) With A as centre and radius more than half of AB, draw arcs on both sides of AB.
- (ii) With the same radius and B as centre, draw arcs cutting the arcs drawn in step (i) at P and Q.
- (iii) Join P and Q. PQ intersects AB at C.
- (i) With A as centre and radius more than half of AB, draw arcs on both sides of AC.
- (ii) With the same radius and C as centre, draw arcs cutting the arcs drawn in step (iv) at R and S.
- (iii) Join R and S. RS intersects AB at D.

Bisect AC again and mark the point of bisection as D.

So, we have:

AD = 
$$\frac{1}{4}$$
(AB), DC =  $\frac{1}{4}$  (AB) and CB =  $\frac{1}{2}$ (AB)

: DB = 
$$\frac{1}{4}$$
 (AB) +  $\frac{1}{2}$ (AB) =  $\frac{3}{4}$ (AB)

Thus, DB is the required line segment of length  $\frac{3}{4}$  (AB).

