CBSE 8th Maths: Construction of quadrilateral (Ch: Practical Geometry)

1. How many measurement s can determine a quadrilateral uniquely?

Ans: 5

2. How many measurements can determine a square?

Ans: 1

3. How many measurements can determine a parallelogram uniquely?

Ans: 3

4. How many measurement can determine a rhombus?

Ans: 2

5. Which property is used to construct a parallelogram. If its one side and two diagonals are given.

Ans: Diagonals are bisects to each other.

6. What property is used to construct a rhombus. If its two diagonals are given.

Ans: Diagonals of a rhombus bisect each other at right angle.

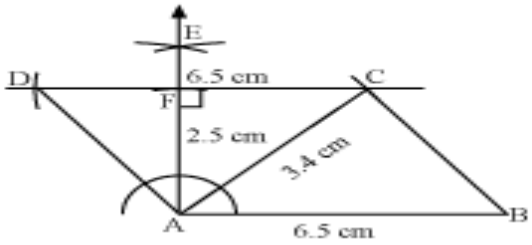
7. Construct a parallelogram ABCD in which AB=6.5 AC=3.8 and the altitude AL from A is 2.5cm draw an altitude from C

Solution: Steps to construct the parallelogram ABCD.

Step 1. Draw AB = 6.5 cm.

Step 2. At A, draw AE ⊥ AB. With A as centre and radius 2.5 cm, mark an arc which intersects AE in F.

Step 3. Draw a line parallel to AB and passing through F.



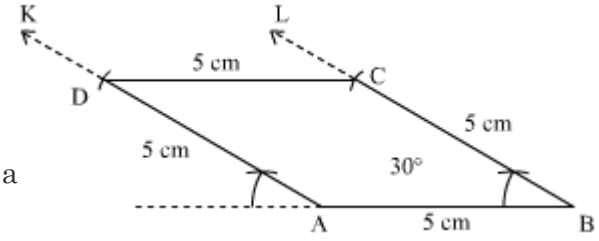
Step 4. With A as centre and radius 3.4 cm, mark an arc which intersects the line parallel to AB in C.

Step 5. With C as centre and radius 6.5 cm, mark an arc which intersects the line CF in D. (Opposite sides of parallelogram are equal)

Step 6. Join BC and DA.

Thus, ABCD is the required parallelogram.

8 .Construct a rhombus of side 5cm and one of its angle equal to 30^0?



S0lution: Following are the steps of construction of a rhombus whose one side and one angle is given:

(i) Construct line segment AB of length 5 cm.

(ii) At B, construct angle of 30° with the help of compass and name it as ∠ABL.

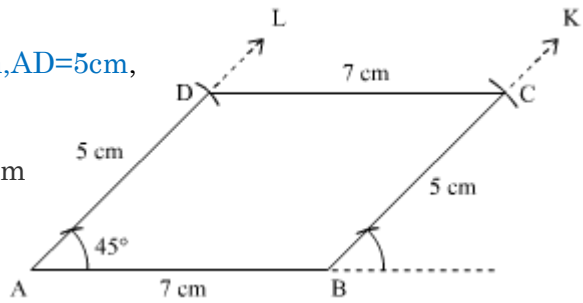
(iii) Taking 5 cm as radius, mark an arc on the ray BL and name the point of intersection as C.

(iv) from point A, construct ray AK parallel to BC.

(v) Taking 5 cm as radius, mark an arc on the ray AK and name the point of intersection as D.

(vi) Join CD. ABCD is the required rhombus.

9. Construct a parallelogram ABCD in which AB=7cm,AD=5cm,



Solution: Following are the steps of construction of a parallelogram whose two sides and angle between them is given:

(i) Construct line segment AB of length 7 cm.

(ii) At point A, construct angle of 45° with the help of compass and name it as ∠BAL.

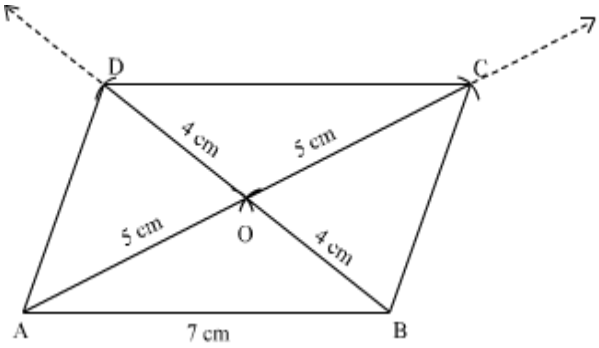
(iii) Taking 5 cm as radius, mark an arc on the ray AL and name the point of intersection as D.

(iv) From point B, construct ray BK parallel to AD.

(v) Taking 5 cm as radius, mark an arc on ray BK and name it as C.

(vi) Join CD. ABCD is the required parallelogram.

10. Construct a parallelogram ABCD in which AB=7cm,AC=10cm,and BD=8cm {remember that the diagonals bisect each other}?



Solution: Following are the steps of construction of a parallelogram whose diagonals and one side is given:

(i) Construct line segment AB of length 7 cm.

(ii) From point A, mark an arc taking 5 cm as radius.

(iii) From point B, mark an arc taking 4 cm as radius. Name the point of intersection as O. Join AO and OB.

(iv) Extend AO and BO. From O, mark an arc on extended ray AO of radius 5 cm. Name it as C.

(v) Similarly mark an arc on extended ray BO of radius 4 cm. Name it as D.

(vi) Join AD, DC and BC. ABCD is the required parallelogram.

[Note: Diagonals of a parallelogram bisect each other. So, AO = OC=10/2=5cm and BO = OD = 8/2 =4cm]