

**CLASS NOTES-ANSWERS****EXERCISE 4.5**

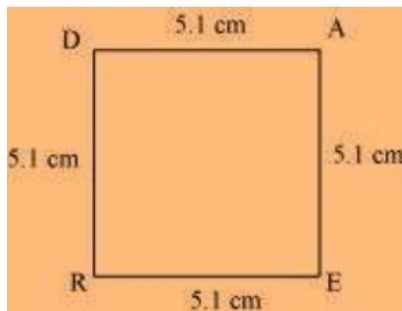
1. Draw the following.

1. The square READ with  $RE = 5.1$  cm.
2. A rhombus whose diagonals are 5.2 cm and 6.4 cm long.
3. A rectangle with adjacent sides of lengths 5 cm and 4 cm.
4. A parallelogram OKAY where  $OK = 5.5$  cm and  $KA = 4.2$  cm. Is it unique?

Answer:

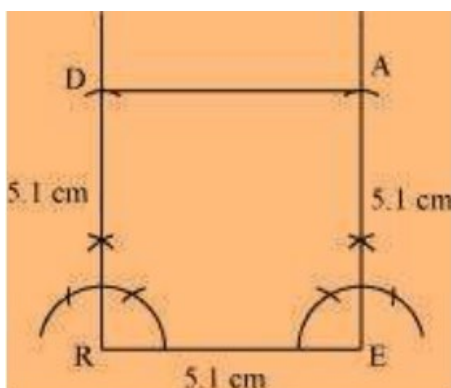
1. All the sides of a square are of the same measure, and also, all the interior angles of a square are  $90^\circ$  measure.

Rough Sketch:



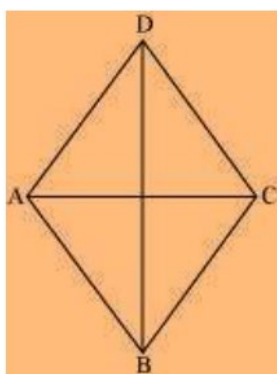
Steps of construction:

- Draw a line segment RE of 5.1 cm and an angle of  $90^\circ$  at points R and E.
- As vertex A and D are 5.1 cm away from vertex E and R, respectively, cut line segments EA and RD, each of 5.1 cm from these rays.
- Join D to A.
- READ is the required square.



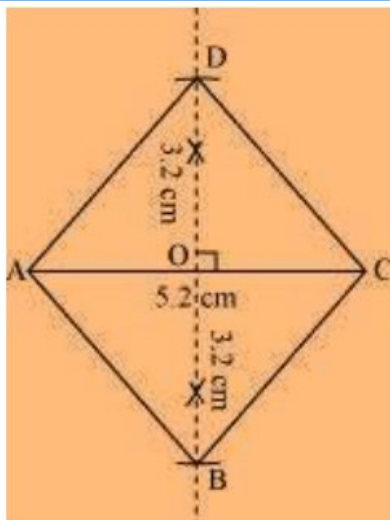
2. In a rhombus, diagonals bisect each other at  $90^\circ$ .

Rough Sketch:



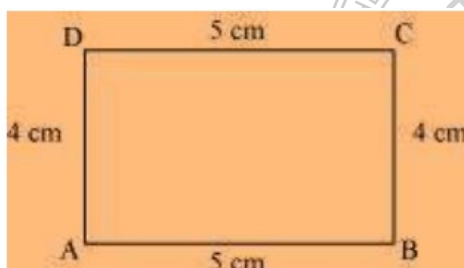
Steps of construction:

- Draw a line segment AC of 5.2 cm and draw its perpendicular bisector. Let it intersect the line segment AC at point O.
- Draw arcs of  $6.4/2 = 3.2$  on both sides of this perpendicular bisector. Let the arcs intersect the perpendicular bisector at points B and D.
- Join points B and D with points A and C.
- ABCD is the required rhombus.



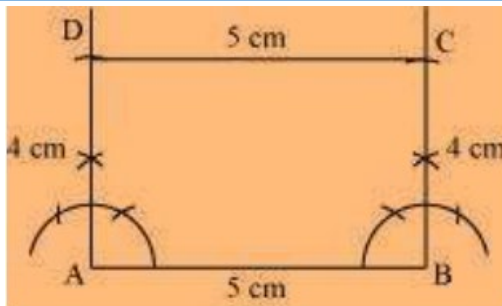
3. Opposite sides of a rectangle have lengths of the same measure, and also, all the interior angles of a rectangle are  $90^\circ$  measure.

Rough Sketch:



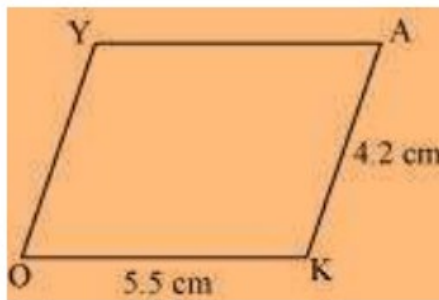
Steps of construction:

- Draw a line segment AB of 5 cm and an angle of  $90^\circ$  at points A and B.
- As vertex C and D are 4 cm away from vertex B and A, respectively, cut line segments AD and BC, each of 4 cm, from these rays.
- Join D to C.
- ABCD is the required rectangle.



4. Opposite sides of a parallelogram are equal and parallel to each other.

Rough Sketch:



Steps of construction:

- Draw a line segment OK of 5.5 cm and a ray at point K at a convenient angle.
- Draw a ray at point O parallel to the ray at K. As the vertices A and Y are 4.2 cm away from the vertices K and O, respectively, cut line segments KA and OY, each of 4.2 cm, from these rays.
- Join Y to A.
- OKAY is the required rectangle.

