Exercise 4.1

Page: 60

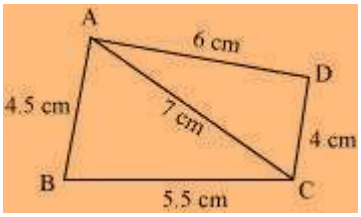
1. Construct the following quadrilaterals.

(i) Quadrilateral ABCD

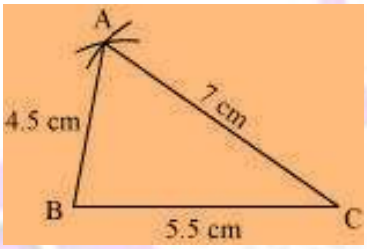
AB = 4.5 cm
BC = 5.5 cm
CD = 4 cm
AD = 6 cm
AC = 7 cm

Solution:

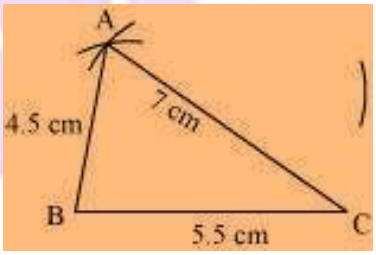
The rough sketch of the quadrilateral ABCD can be drawn as follows.



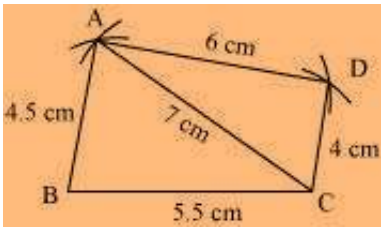
(1) ΔABC can be constructed by using the given measurements as follows.



(2) Vertex D is 6 cm away from vertex A. Therefore, while taking A as centre, draw an arc of radius 6 cm.



(3) Taking C as centre, draw an arc of radius 4 cm, cutting the previous arc at point D. Joint D to A and C.



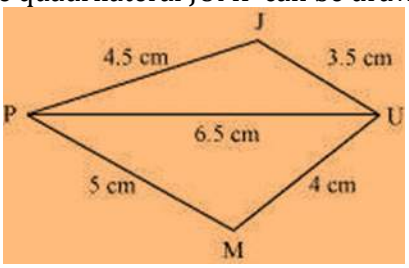
ABCD is the required quadrilateral.

(ii) Quadrilateral JUMP

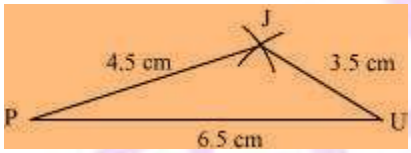
JU = 3.5 cm
UM = 4 cm
MP = 5 cm
PJ = 4.5 cm
PU = 6.5 cm

Solution:

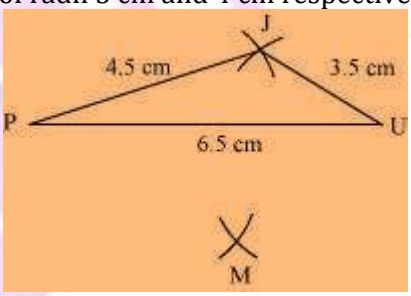
The rough sketch of the quadrilateral JUMP can be drawn as follows.



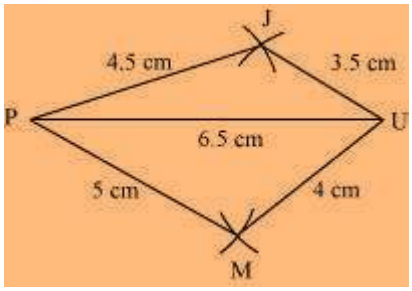
(1) Δ JUP can be constructed by using the given measurements as follows.



(2) Vertex M is 5 cm away from vertex P and 4 cm away from vertex U. Taking P and U as centres, draw arcs of radii 5 cm and 4 cm respectively. Let the point of intersection be M.



(3) Join M to P and U.



JUMP is the required quadrilateral.

(iii) Parallelogram MORE

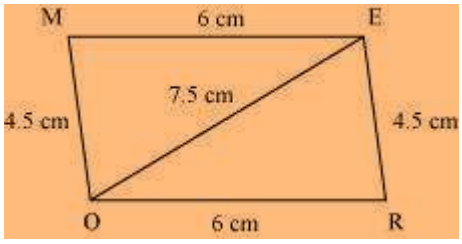
OR = 6 cm

RE = 4.5 cm
EO = 7.5 cm

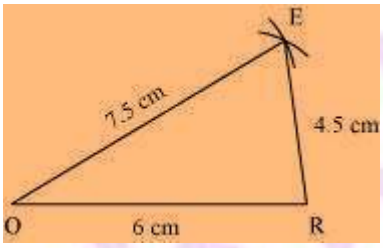
Solution:

We know that opposite sides of a parallelogram are equal in length and also these are parallel to each other.
i.e., ME = OR, MO = ER

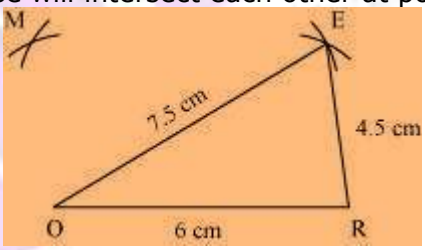
The rough sketch of the parallelogram MORE can be drawn as follows.



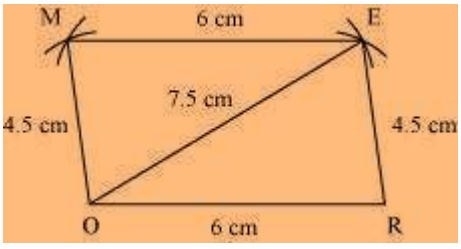
(1) Δ EOR can be constructed by using the given measurements as follows.



(2) Vertex M is 4.5 cm away from vertex O and 6 cm away from vertex E. Therefore, while taking O and E as centres, draw arcs of 4.5 cm radius and 6 cm radius respectively. These will intersect each other at point M.



(3) Join M to O and E.



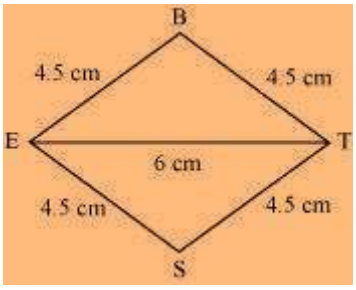
MORE is the required parallelogram.

(iv) Rhombus BEST
BE = 4.5 cm

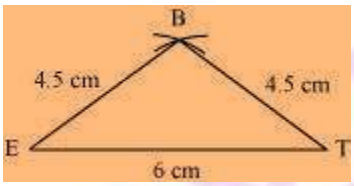
ET = 6 cm

Solution:

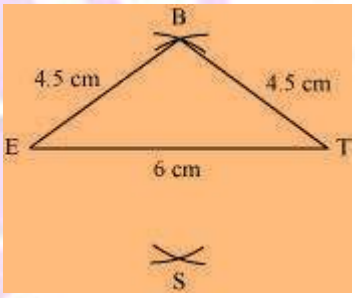
We know that all sides of a rhombus are of the same measure. Hence, BE = ES = ST = TB
The rough sketch of the rhombus BEST can be drawn as follows.



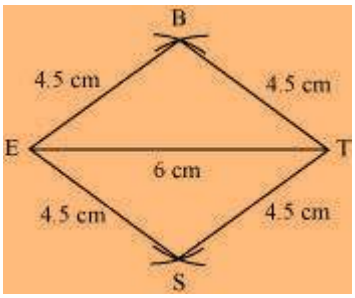
(1) Δ BET can be constructed by using the given measurements as follows.



(2) Vertex S is 4.5 cm away from vertex E and also from vertex T. Therefore, while taking E and T as centres, draw arcs of 4.5 cm radius, which will be intersecting each other at point S.



(3) Join S to E and T.



BEST is the required rhombus.