

RD SHARMA

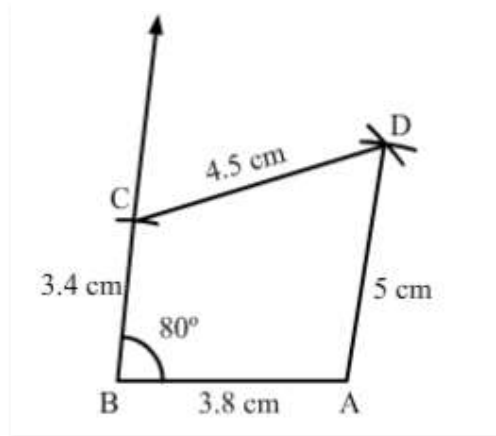
Solutions

Class 8 Maths

Chapter 18

Ex 18.3

1. Construct a quadrilateral ABCD in which $AB = 3.8$ cm, $BC = 3.4$ cm, $CD = 4.5$ cm, $AD = 5$ cm and $\angle B = 80^\circ$.



Steps of construction:

Step I: Draw $AB = 3.8$ cm.

Step II: Construct $\angle ABC = 80^\circ$.

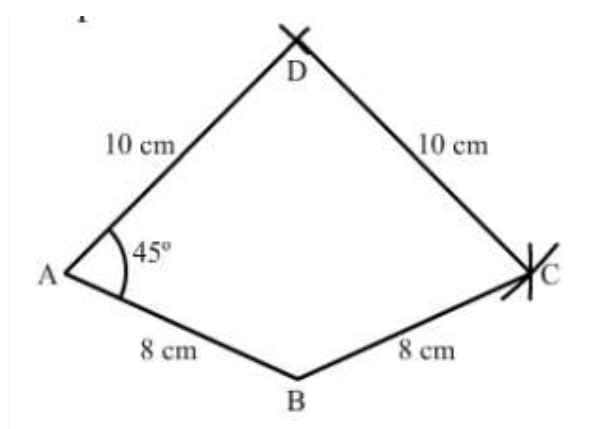
Step III: With B as the center and radius 3.4 cm, cut off $BC = 3.4$ cm.

Step IV: With C as the center and radius 4.5 cm, draw an arc.

Step V: With A as the center and radius 5.3 cm, draw an arc to intersect the arc drawn in Step IV at D.

Step VI: Join AD, BC and CD to obtain the required quadrilateral.

2. Construct a quadrilateral ABCD, given that $AB = 8$ cm, $BC = 8$ cm, $CD = 10$ cm, $AD = 10$ cm and $\angle A = 45^\circ$.



Steps of construction:

Step I: Draw $AB = 8$ cm.

Step II: Construct $\angle BAD = 45^\circ$.

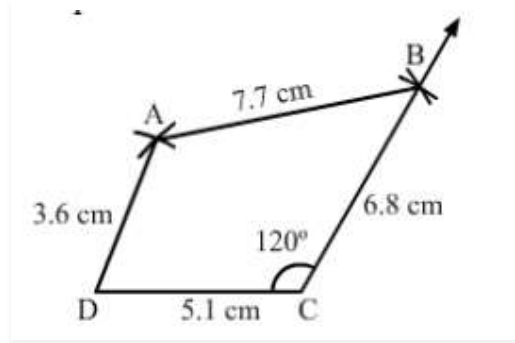
Step III: With A as the centre and radius 10 cm, cut off $AD = 10$ cm.

Step IV: With D as the centre and radius 10 cm, draw an arc.

Step V: With B as the centre and radius 8 cm, draw an arc to intersect the arc drawn in Step IV at C.

Step VI: Join BC and CD to obtain the required quadrilateral.

3. Construct a quadrilateral ABCD in which $AB = 7.7$ cm, $BC = 6.8$ cm, $CD = 5.1$ cm, $AD = 3.6$ cm and $\angle C = 120^\circ$.



Steps of construction:

Step I: Draw $DC = 5.1$ cm.

Step II: Construct $\angle DCB = 120^\circ$.

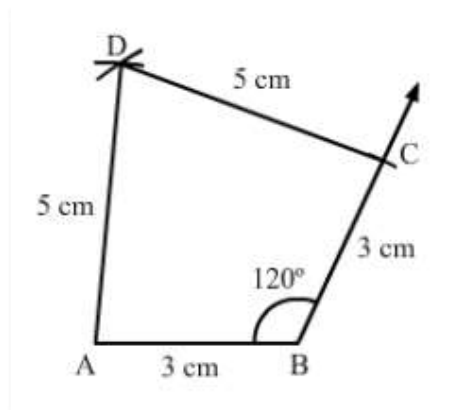
Step III: With C as the center and radius 6.8 cm, cut off $BC = 6.8$ cm.

Step IV: With B as the center and radius 7.7 cm, draw an arc.

Step V: With D as the center and radius 3.6 cm, draw an arc to intersect the arc drawn in Step IV at A.

Step VI: Join AB and AD to obtain the required quadrilateral.

4. Construct a quadrilateral ABCD in which $AB = BC = 3$ cm, $AD = CD = 5$ cm and $\angle B = 120^\circ$.



Steps of construction:

Step I: Draw $AB = 3$ cm.

Step II: Construct $\angle ABC = 120^\circ$.

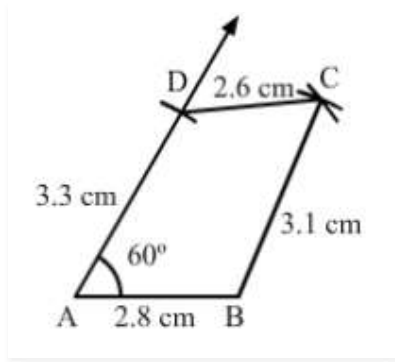
Step III: With B as the center and radius 3 cm, cut off $BC = 3$ cm.

Step IV: With C as the center and radius 5 cm, draw an arc.

Step V: With A as the center and radius 5 cm, draw an arc to intersect the arc drawn in Step IV at D.

Step VI: Join AD and CD to obtain the required quadrilateral.

5. Construct a quadrilateral ABCD in which $AB = 2.8$ cm, $BC = 3.1$ cm, $CD = 2.6$ cm and $DA = 3.3$ cm and $\angle A = 60^\circ$.



Steps of construction:

Step I: Draw $AB = 2.8$ cm.

Step II: Construct $\angle BAD = 60^\circ$.

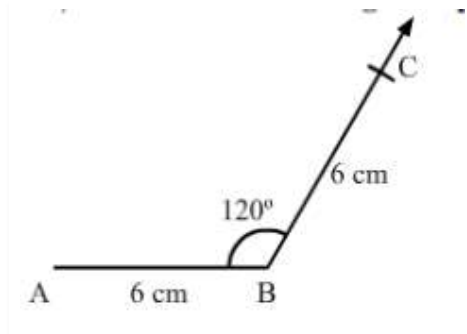
Step III: With A as the center and radius 3.3 cm, cut off $AD = 3.3$ cm.

Step IV: With D as the center and radius 2.6 cm, draw an arc.

Step V: With B as the center and radius 3.1 cm, draw an arc to intersect the arc drawn in Step IV at C.

Step VI: Join BC and CD to obtain the required quadrilateral.

6. Construct a quadrilateral ABCD in which $AB = BC = 6$ cm, $AD = DC = 4.5$ cm and $\angle B = 120^\circ$.



Steps of construction:

Step I: Draw $AB = 6$ cm.

Step II: Construct $\angle ABC = 120^\circ$.

Step III: With B as the centre and radius 6 cm, cut off $BC = 6$ cm. Now, we can see that AC is about 10.3 cm which is greater than $AD + DC = 4.5 + 4.5 = 9$ cm.

We know that sum of the lengths of two sides of the triangle is always greater than the third side but here, the sum of AD and CD is less than AC.

So, construction of the given quadrilateral is not possible.