

**RD SHARMA**

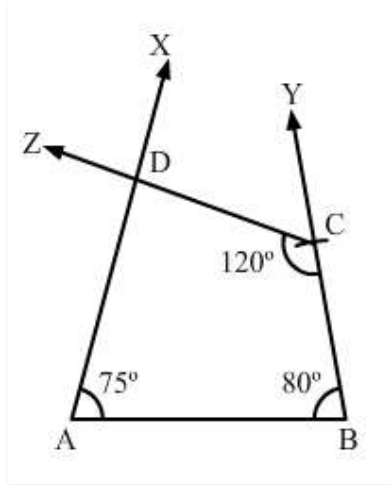
**Solutions**

**Class 8 Maths**

**Chapter 18**

**Ex 18.5**

1. Construct a quadrilateral ABCD given that  $AB = 4$  cm,  $BC = 3$  cm,  $\angle A = 75^\circ$ ,  $\angle B = 80^\circ$  and  $\angle C = 120^\circ$ .



**Steps of construction:**

Step I: Draw  $AB = 4$  cm.

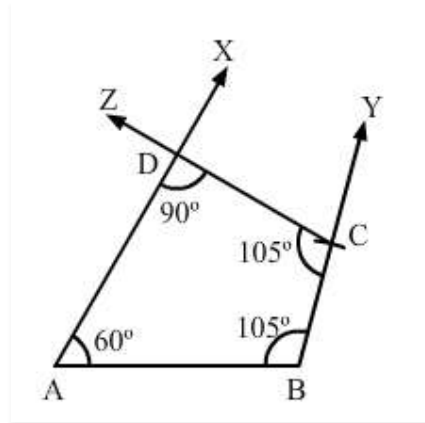
Step II: Construct  $\angle XAB = 75^\circ$  at A and  $\angle ABY = 80^\circ$  at B.

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

Step IV: At C, draw  $\angle BCZ = 120^\circ$  such that it meets AX at D.

The quadrilateral so obtained is the required quadrilateral.

2. Construct a quadrilateral ABCD, where  $AB = 5.5$  cm,  $BC = 3.7$  cm,  $\angle A = 60^\circ$ ,  $\angle B = 105^\circ$  and  $\angle D = 90^\circ$ .



We know that the sum of all the angles in a quadrilateral is 360.

$$\text{i.e. } \angle A + \angle B + \angle C + \angle D = 360^\circ$$

$$\angle C = 105^\circ$$

**Steps of construction:**

Step I: Draw  $AB = 5.5$  cm.

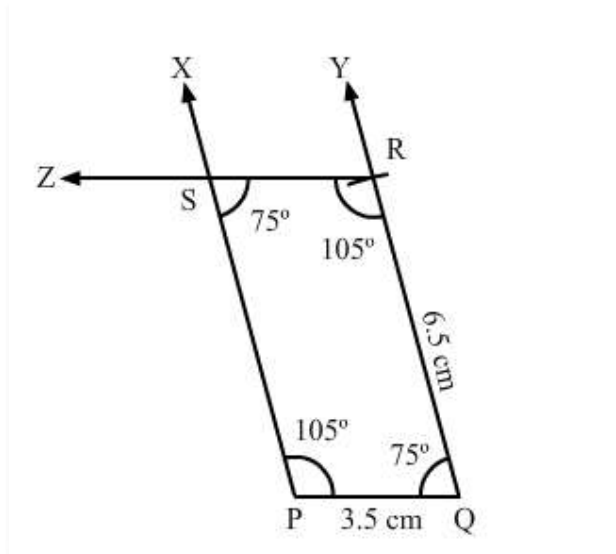
Step II: Construct  $\angle XAB = 60^\circ$  at A and  $\angle ABY = 105^\circ$  at B.

Step III: With B as the center and radius 3.7 cm, cut off  $BC = 3.7$  cm.

Step IV: At C, draw  $\angle BCZ = 105^\circ$  such that it meets AX at D.

The quadrilateral so obtained is the required quadrilateral.

3. Construct a quadrilateral PQRS, where  $PQ = 3.5$  cm,  $QR = 6.5$  cm,  $\angle P = \angle R = 105^\circ$  and  $\angle S = 75^\circ$ .



We know that the sum of all the angles in a quadrilateral is 360.

$$\text{i.e., } \angle P + \angle Q + \angle R + \angle S = 360^\circ$$

$$\angle Q = 75^\circ$$

**Steps of construction:**

Step I: Draw  $PQ = 3.5$  cm.

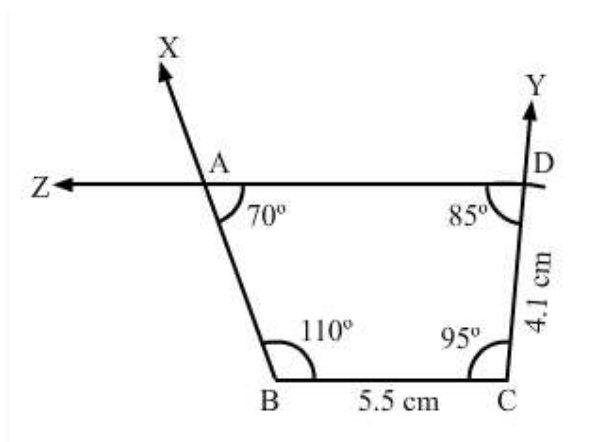
Step II: Construct  $\angle XPQ = 75^\circ$  at P and  $\angle PQY = 75^\circ$  at Q.

Step III: With Q as the center and radius 6.5 cm, cut off  $QR = 6.5$

Step IV: At R, draw  $\angle QRZ = 105^\circ$  such that it meets PX at S.

The quadrilateral so obtained is the required quadrilateral.

4. Construct a quadrilateral ABCD when  $BC = 5.5$  cm,  $CD = 4.1$  cm,  $\angle A = 70^\circ$ ,  $\angle B = 110^\circ$  and  $\angle D = 85^\circ$ .



We know that the sum of all the angles in a quadrilateral is 360. i.e.

$$\text{i.e. } \angle A + \angle B + \angle C + \angle D = 360^\circ$$

$$\angle C = 95^\circ$$

**Steps of construction:**

Step I: Draw  $BC = 5.5$  cm.

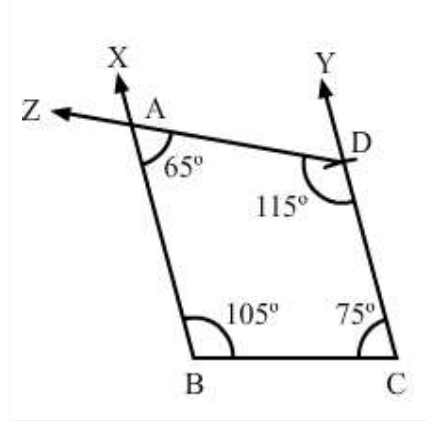
Step II: Construct  $\angle XBC = 110^\circ$  at B and  $\angle BCY = 95^\circ$  at C.

Step III: With C as the center and radius 4.1 cm, cut off  $CD = 4.1$  cm.

Step IV: At D, draw  $\angle CDZ = 85^\circ$  such that it meets  $BY$  at A.

The quadrilateral so obtained is the required quadrilateral.

**5. Construct a quadrilateral ABCD, where  $\angle A = 65^\circ$ ,  $\angle B = 105^\circ$ ,  $\angle C = 75^\circ$ ,  $BC = 5.7$  cm and  $CD = 6.8$  cm.**



We know that the sum of all the angles in a quadrilateral is 360. i.e

$$\text{i.e. } \angle A + \angle B + \angle C + \angle D = 360^\circ$$

$$\angle D = 115^\circ$$

**Steps of Construction:**

Step I: Draw  $BC = 5.7$  cm.

Step II: Construct  $\angle XBC = 105^\circ$  at B and  $\angle BCY = 105^\circ$  at C.

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

Step IV: At D, draw  $\angle CDZ = 115^\circ$  such that it meets  $BY$  at A.

The quadrilateral so obtained is the required quadrilateral.

**6. Construct a quadrilateral PQRS, in which  $PQ = 4$  cm,  $QR = 5$  cm,  $\angle P = 50^\circ$ ,  $\angle Q = 110^\circ$  and  $\angle R = 70^\circ$ .**

