

**EXERCISE 18.2**

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**1. Construct a quadrilateral ABCD in which AB = 3.8 cm, BC = 3.0 cm, AD = 2.3 cm, AC = 4.5 cm and BD = 3.8 cm.**

**Solution:**

The given details are AB = 3.8 cm, BC = 3.0 cm, AD = 2.3 cm, AC = 4.5 cm and BD = 3.8 cm.

Steps to construct a quadrilateral:

Step 1- Draw a line AC = 6cm.

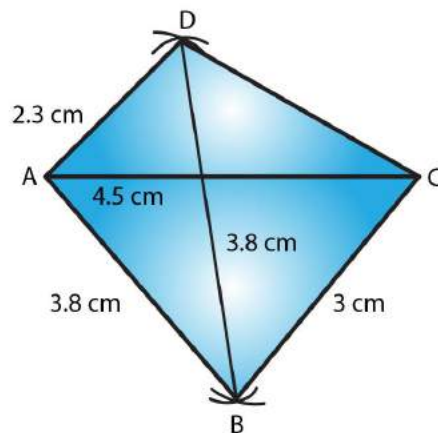
Step 2- Cut an arc of radius 3.8cm with A as the center to mark that point as B.

Step 3- Cut an arc of radius 3cm with C as the center to intersect with point B.

Step 4- Cut an arc of radius 3.8cm with B as the center to mark that point as D.

Step 5- Cut an arc of radius 2.3cm with A as the center to intersect with point D.

Step 6- Now join AB, BD, AD and DC



**2. Construct a quadrilateral ABCD in which BC = 7.5 cm, AC = AD = 6 cm, CD = 5 cm and BD = 10 cm.**

**Solution:**

The given details are BC = 7.5 cm, AC = AD = 6 cm, CD = 5 cm and BD = 10 cm.

Steps to construct a quadrilateral:

Step 1- Draw a line AC = 6cm.

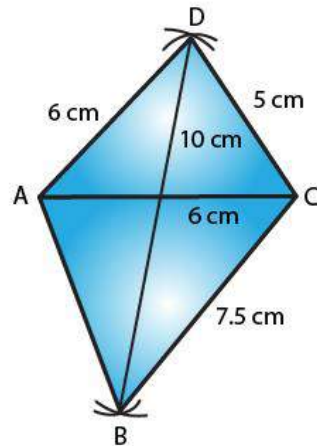
Step 2- Cut an arc of radius 6cm with A as the center to mark that point as D.

Step 3- Cut an arc of radius 5cm with C as the center to intersect at point D.

Step 4- Cut an arc of radius 10cm with D as the center to mark that point as B.

Step 5- Cut an arc of radius 7.5cm with C as the center to intersect at point B.

Step 6- Now join AD, CD, DB and AB



**3. Construct a quadrilateral ABCD when  $AB = 3$  cm,  $CD = 3$  cm,  $DA = 7.5$  cm,  $AC = 8$  cm and  $BD = 4$  cm.**

**Solution:**

The given details are  $AB = 3$  cm,  $CD = 3$  cm,  $DA = 7.5$  cm,  $AC = 8$  cm and  $BD = 4$  cm.

Consider a triangle ABD from the given data,

So,  $AB + BD = 3 + 4 = 7$  cm

We know that sum of lengths of two sides of a triangle is always greater than the third side.

$\therefore$  The construction is not possible.

**4. Construct a quadrilateral ABCD given  $AD = 3.5$  cm,  $BC = 2.5$  cm,  $CD = 4.1$  cm,  $AC = 7.3$  cm and  $BD = 3.2$  cm.**

**Solution:**

The given details are  $AD = 3.5$  cm,  $BC = 2.5$  cm,  $CD = 4.1$  cm,  $AC = 7.3$  cm and  $BD = 3.2$  cm.

Steps to construct a quadrilateral:

Step 1- Draw a line  $CD = 4.1$  cm

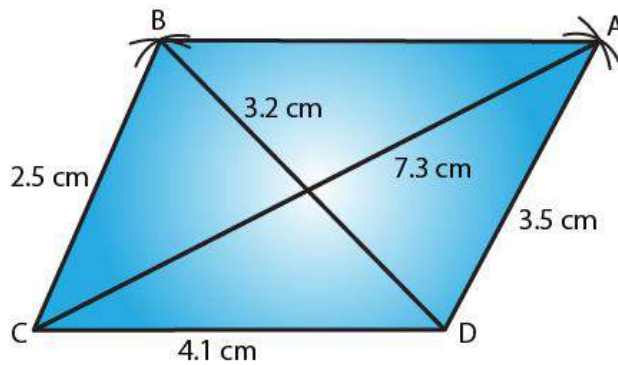
Step 2- Cut an arc of radius 7.3 cm with C as the center to mark that point as A.

Step 3- Cut an arc of radius 3.5 cm with D as the center to intersect at point A.

Step 4- Cut an arc of radius 3.2 cm with D as the center to mark that point as B.

Step 5- Cut an arc of radius 2.5 cm with C as the center to intersect at point B.

Step 6- Now join CA, DA, DB, CB and AB



**5. Construct a quadrilateral ABCD given  $AD = 5$  cm,  $AB = 5.5$  cm,  $BC = 2.5$  cm,  $AC = 7.1$  cm and  $BD = 8$  cm.**

**Solution:**

The given details are  $AD = 5$  cm,  $AB = 5.5$  cm,  $BC = 2.5$  cm,  $AC = 7.1$  cm and  $BD = 8$  cm.

Steps to construct a quadrilateral:

Step 1- Draw a line  $AB = 5.5$ cm

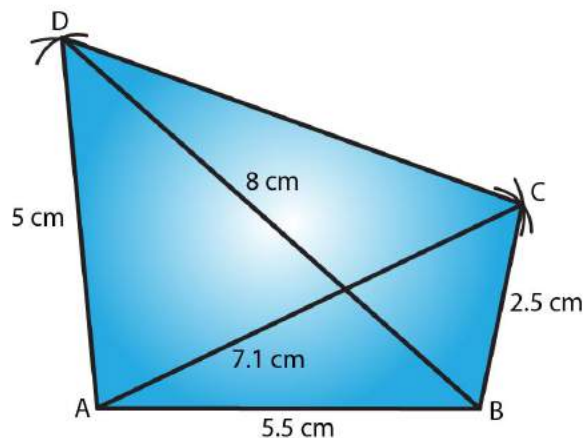
Step 2- Cut an arc of radius  $2.5$ cm with  $B$  as the center to mark that point as  $C$ .

Step 3- Cut an arc of radius  $7.1$ cm with  $A$  as the center to intersect at point  $C$ .

Step 4- Cut an arc of radius  $8$ cm with  $B$  as the center to mark that point as  $D$ .

Step 5- Cut an arc of radius  $5$ cm with  $A$  as the center to intersect at point  $D$ .

Step 6- Now join  $BC$ ,  $AC$ ,  $BD$ ,  $AD$  and  $CD$



**6. Construct a quadrilateral ABCD in which  $BC = 4$  cm,  $CA = 5.6$  cm,  $AD = 4.5$  cm,  $CD = 5$  cm and  $BD = 6.5$  cm.**

**Solution:**

The given details are  $BC = 4\text{ cm}$ ,  $CA = 5.6\text{ cm}$ ,  $AD = 4.5\text{ cm}$ ,  $CD = 5\text{ cm}$  and  $BD = 6.5\text{ cm}$  cm.

Steps to construct a quadrilateral:

Step 1- Draw a line  $BC = 4\text{ cm}$

Step 2- Cut an arc of radius  $6.5\text{ cm}$  with  $B$  as the center to mark that point as  $D$ .

Step 3- Cut an arc of radius  $5\text{ cm}$  with  $C$  as the center to intersect at point  $D$ .

Step 4- Cut an arc of radius  $5.6\text{ cm}$  with  $C$  as the center to mark that point as  $A$ .

Step 5- Cut an arc of radius  $4.5\text{ cm}$  with  $D$  as the center to intersect at point  $A$ .

Step 6- Now join  $BD$ ,  $CD$ ,  $CA$ ,  $DA$  and  $AB$

