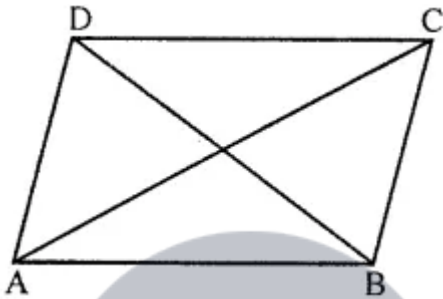


1. Why is it better to use a divider and a ruler than a ruler only, while measuring the length of a line segment?  
Solution:

The divider gives up accurate measurement, whereas the ruler may cause difficulties in reading length. Therefore, it is better to use a divider while measuring the length of a line segment.

2. In the given figure, compare the line segments with the help of a divider and fill in the blanks by using the symbol  $>$ ,  $=$  or  $<$ :

- (i) AB ..... CD
- (ii) BC ..... AB
- (iii) AC ..... BD
- (iv) CD ..... BD



Solution:

(i) From the figure,

$AB = CD$  ... [in parallelograms, opposites are equal]

(ii)  $BC < AB$

(iii)  $AC > BD$

(iv)  $CD < BD$

3. If A, B and C are collinear points such that  $AB = 6$  cm,  $BC = 4$  cm and  $AC = 10$  cm, which one of them lies between the other two?

Solution:

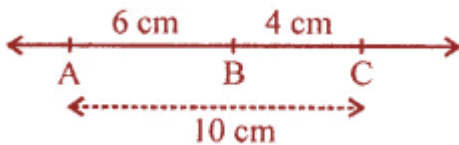
From the question, it is given that,

A, B and C are collinear points

$AB = 6$  cm

$BC = 4$  cm

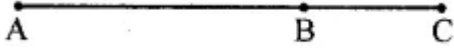
$AC = 10$  cm



Here, point B lies between the other two, i.e., A and C.

4. In the given figure, verify the following by measurement:

- (i)  $AB + BC = AC$   
(ii)  $AC - BC = AB$



**Solution:**

From the figure,

By using the divider and ruler, we measured the given figure,

So,

$AB = 3$  cm,  $BC = 1.5$  cm and  $AC = 4.5$  cm

(i)  $AB + BC = AC$

$$3 \text{ cm} + 1.5 \text{ cm} = 4.5 \text{ cm}$$

$$4.5 \text{ cm} = 4.5 \text{ cm}$$

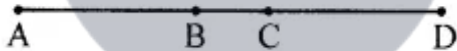
(ii)  $AC - BC = AB$

$$4.5 \text{ cm} - 1.5 \text{ cm} = 3 \text{ cm}$$

$$3 \text{ cm} = 3 \text{ cm}$$

5. In the given figure, verify by measurement that:

- (i)  $AC + BD = AD + BC$   
(ii)  $AB + CD = AD - BC$



**Solution:**

From the figure,

By using the divider and ruler, we measured the given figure,

So,

$AB = 1.8$  cm,  $BC = 0.8$  cm,  $BD = 2.7$  cm,  $CD = 1.9$  cm,  $AC = 2.6$  cm and  $AD = 4.5$  cm

(i)  $AC + BD = AD + BC$

Consider left-hand side (LHS) =  $AC + BD$

$$= 2.6 \text{ cm} + 2.7 \text{ cm}$$

$$= 5.3 \text{ cm}$$

Now, right-hand side (RHS) =  $AD + BC$

$$= 4.5 \text{ cm} + 0.8 \text{ cm}$$

$$= 5.3 \text{ cm}$$

By comparing LHS and RHS

$$\text{LHS} = \text{RHS}$$

$$5.3 \text{ cm} = 5.3 \text{ cm}$$

$$\text{Therefore, } AC + BD = AD + BC$$

$$\text{(ii) } AB + CD = AD - BC$$

Consider left-hand side (LHS) =  $AB + CD$

$$= 1.8 \text{ cm} + 1.9 \text{ cm}$$

$$= 3.7 \text{ cm}$$

Now, right-hand side (RHS) =  $AD - BC$

$$= 4.5 \text{ cm} - 0.8 \text{ cm}$$

$$= 3.7 \text{ cm}$$

By comparing LHS and RHS

$$\text{LHS} = \text{RHS}$$

$$3.7 \text{ cm} = 3.7 \text{ cm}$$

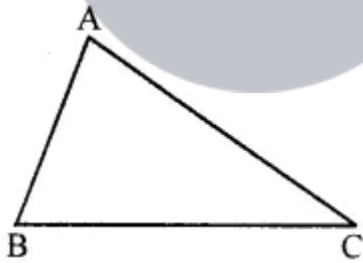
Therefore,  $AB + CD = AD - BC$ .

**6. In the given figure, measure the lengths of the sides of the triangle ABC and verify:**

**(i)  $AB + BC > AC$**

**(ii)  $BC + AC > AB$**

**(iii)  $AC + AB > BC$**



**Solution:**

From the figure,

By using the divider and ruler, we measured the given figure,

So,

$$AB = 2.6 \text{ cm, } BC = 3.9 \text{ cm, } AC = 4 \text{ cm}$$

**(i)  $AB + BC > AC$**

$$2.6 + 3.9 \text{ cm} > 4 \text{ cm}$$

$$6.5 \text{ cm} > 4 \text{ cm}$$

(ii)  $BC + AC > AB$

$3.9 + 4 \text{ cm} > 2.6 \text{ cm}$

$7.9 \text{ cm} > 2.6 \text{ cm}$

(iii)  $AC + AB > BC$

$4 \text{ cm} + 2.6 \text{ cm} > 3.9 \text{ cm}$

$6.6 \text{ cm} > 3.9 \text{ cm}$



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