Question 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:

There may be errors due to the thickness of the ruler and angular viewing by using a ruler. These errors are eradicated by using a divider. So, it is better to use a divider with ruler, than a ruler only, while measuring the length of a line segment.

Question 2.

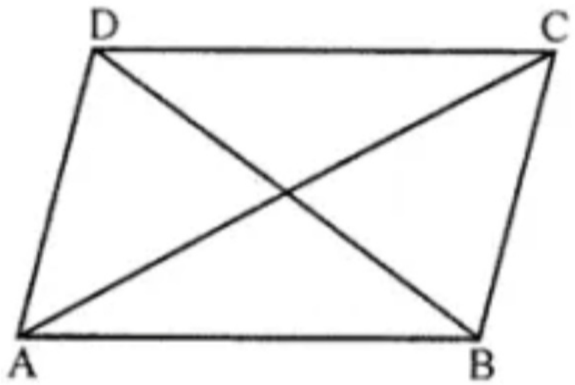
In the given figure, compare the line segments with the help of a divider and fill in the blanks by using the symbol >, = or <:

(i) AB ..... CD

(ii) BC ..... AB

(iii) AC ..... BD

(iv) CD ..... BD



Solution:

(i) AB = CD

(ii) BC < AB

(iii) AC > BD

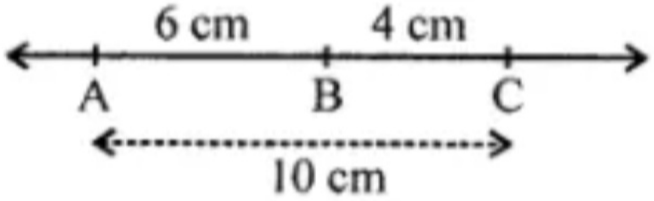
(iv) CD < BD

Question 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:

Given : A, B and C are colinear points



Point B lies between A and C.

Question 4.

In the given figure, verify the following by measurement:

(i) AB + BC = AC

(ii) AC − BC = AB

Solution:

Measure with help of divider and ruler.

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

(i) AB + BC = AC

⇒ 3 cm + 1.5 cm = 4.5 cm

⇒ 4.5 cm = 4.5 cm

(ii) AC − BC = AB

⇒ 4.5 cm − 5 cm = 3 cm

⇒ 3 cm = 3 cm

Question 5.

In the given figure, verify by measurement that:

(i) AC + BD = AD + BC

(ii) AB + CD = AD − BC

Solution:

Measure with help of divide and ruler.

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

⇒ 2.6 cm + 2.7 cm = 4.5 cm + 0.8 cm

⇒ 5.3 cm = 5.3 cm

(ii) AB + CD = AD − BC

⇒ 1.8 cm = 1.9 cm = 4.5 cm − 0.8 cm

⇒ 3.7 cm = 3.7 cm

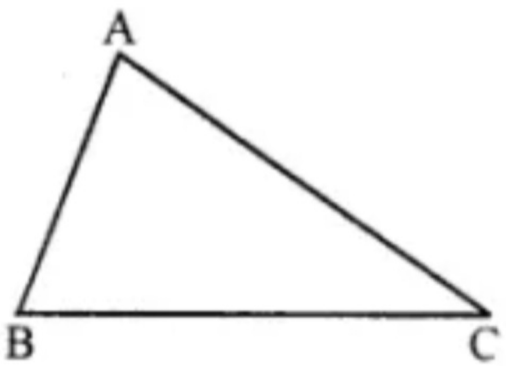
Question 6.

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:

Measure with help of divide and ruler.

AB = 2.5 cm, BC = 3.8 cm, AC = 4 cm

(i) AB + BC > AC

$\Rightarrow$ 2.5 + 3.8 cm > 4 cm

$\Rightarrow$ 5.3 cm > 4 cm

(ii) BC + AO > AB

$\Rightarrow$ 3.8 + 4 cm > 2.5 cm

$\Rightarrow$ 7.8 cm > 7.5 cm

(iii) AC + AB > BC

$\Rightarrow$ 4 cm + 2.5 cm > 3.8 cm

$\Rightarrow$ 6.5 cm > 3.8 cm