NCERT Solutions For Class 6 Maths Chapter 5 Understanding Elementary Shapes Ex 5.1

Ex 5.1 Class 6 Maths Question 1.

What is the disadvantage in comparing line segment by metre observation?

Solution:

Comparing the lengths of two line segments simply by 'observation' may not be accurate. So we use divider to compare the length of the given line segments.

Ex 5.1 Class 6 Maths Question 2.

Why is it better to use a divider than a ruler, while measuring the length of a line segment?

Solution:

Measuring the length of a line segment using a ruler, we may have the following errors:

(i) Thickness of the ruler

(ii) Angular viewing

These errors can be eradicated by using the divider. So, it is better to use a divider than a ruler, while measuring the length of a line segment.

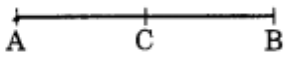
Ex 5.1 Class 6 Maths Question 3.

Draw any line segment, say $\overline{AB}$. Take any point C lying in between A and B. Measure the lengths of AB, BC and AC. Is AB = AC + CB?

[Note: If A, B, C are any three points on a line such AC + CB = AB, then we can be sure that C lies between A and B]

Solution:

Let us consider



A, B and C such that C lies between A and B and AB = 7 cm.

AC = 3 cm, CB = 4 cm.

∴ AC + CB = 3 cm + 4 cm = 7 cm.

But, AB = 7 cm.

So, AB = AC + CB.

Ex 5.1 Class 6 Maths Question 4.

If A, B, C are three points on a line such that AB = 5 cm, BC = 3 cm and AC = 8 cm, which one of them lies between the other two?

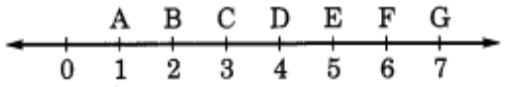
Solution:

We have, AB = 5 cm; BC = 3 cm

∴ AB + BC = 5 + 3 = 8 cm

But, AC = 8 cm
Hence, B lies between A and C.

Ex 5.1 Class 6 Maths Question 5.
Verify, whether D is the mid point of $\overline{AG}$.

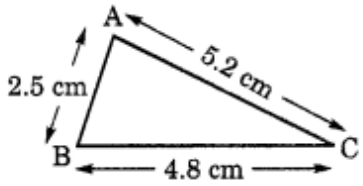


Solution:
From the given figure, we have
AG = 7 cm – 1 cm = 6 cm
AD = 4 cm – 1 cm = 3 cm
and DG = 7 cm – 4 cm = 3 cm
∴ AG = AD + DG.
Hence, D is the mid point of $\overline{AG}$.

Ex 5.1 Class 6 Maths Question 6.
If B is the mid point of $\overline{AC}$ and C is the mid point of $\overline{BD}$, where A, B, C, D lie on a straight line, say why AB = CD?
Solution:
We have

B is the mid point of $\overline{AC}$.
∴ AB = BC …(i)
C is the mid-point of $\overline{BD}$.
BC = CD
From Eq.(i) and (ii), We have
AB = CD

Ex 5.1 Class 6 Maths Question 7.
Draw five triangles and measure their sides. Check in each case, if the sum of the length of any two sides is always less than the third side.
Solution:
Case I. In ΔABC



Let AB = 2.5 cm

BC = 4.8 cm

and AC = 5.2 cm

AB + BC = 2.5 cm + 4.8 cm

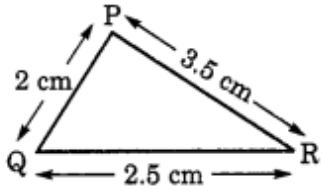
= 7.3 cm

Since, 7.3 > 5.2

So, AB + BC > AC

Hence, sum of any two sides of a triangle is greater than the third side.

Case II. In ΔPQR,



Let PQ = 2 cm

QR = 2.5 cm

and PR = 3.5 cm

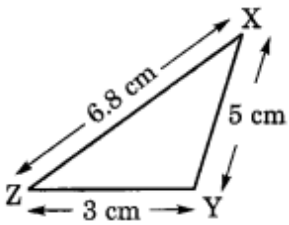
PQ + QR = 2 cm + 2.5 cm = 4.5 cm

Since, 4.5 > 3.5

So, PQ + QR > PR

Hence, sum of any two sides of a triangle is greater than the third side.

Case III. In ΔXYZ,



Let XY = 5 cm

YZ = 3 cm

and ZX = 6.8 cm

XY + YZ = 5 cm + 3 cm

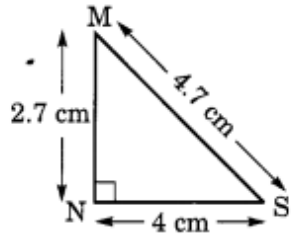
= 8 cm

Since, 8 > 6.8

So, XY + YZ > ZX

Hence, the sum of any two sides of a triangle is greater than the third side.

Case IV. In ΔMNS,



Let MN = 2.7 cm

NS = 4 cm

MS = 4.7 cm

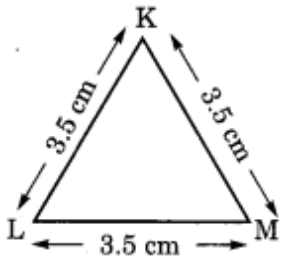
and MN + NS = 2.7 cm + 4 cm = 6.7 cm

Since, 6.7 >4.7

So, MN + NS > MS

Hence, the sum of any two sides of a triangle is greater than the third side.

Case V. In ΔKLM,



Let KL = 3.5 cm

LM = 3.5 cm

KM = 3.5 cm

and KL + LM = 3.5 cm + 3.5 cm = 7 cm

7 cm > 3.5 cm

Solution:

(i) For one-fourth revolution, we have

So, KL + LM > KM

Hence, the sum of any two sides of a triangle is greater than the third side.

Hence, we conclude that the sum of any two sides of a triangle is never less than the third side.