Short Answer Type Questions – II

[3 MARKS]

Que 1.In Fig. 5.6, if $AC = BD$, THEN PROVE THAT $AB = CD$.

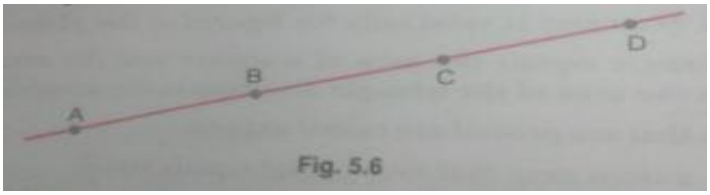

Fig. 5.6

Sol. $AC = BD$ (Given) $\ldots(i)$

$AC = AB + BC$ (Point B lies between A and C) $\ldots(ii)$

$BD = BC + CD$ (Point C lies between B and D) $\ldots(iii)$

Substituting (ii) and (iii) in (i), we get

$AB + BC = BC + CD$

According to Euclid's third axiom, if equals are subtracted from equals, the remainders are equal.

So, $AB = CD$ (Subtracting BC from both sides)

Que 2. In Fig. 5.7, $AC = XD$, C is the mid-point of AB and D is the mid-point of XY. Using a Euclid's axiom, show that $AB = XY$.

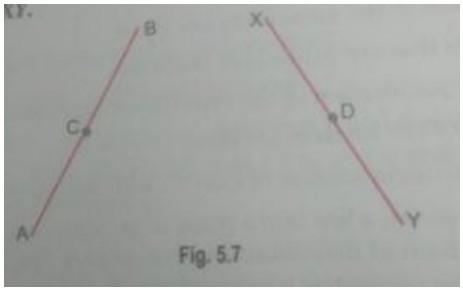

Fig. 5.7

Sol. $AB = 2AC$ (C is the mid-point of AB)

$XY = 2XD$ (D is the mid-point of XY)

Also $AC = XD$ (Given)

Therefore, $AB = XY$, because things which are double of the same things are equal to one another.

Que 3. In the Fig. 5.8, if $\angle 1 = \angle 3, \angle 2 = \angle 4$ and $\angle 3 = \angle 4$, write the relation between $\angle 1$ and $\angle 2$, using a Euclid's axiom.

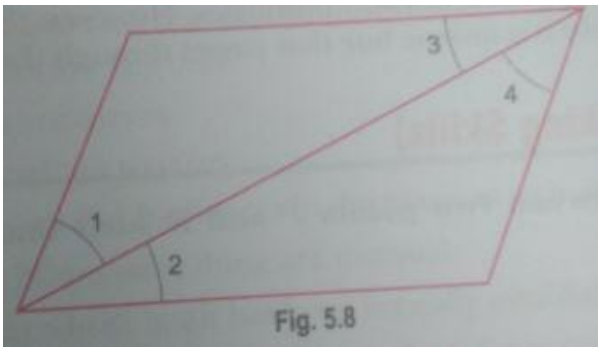

Fig. 5.8

Sol. Here $\angle 3 = \angle 4, \angle 1 = \angle 3$

And $\angle 2 = \angle 4$

According to Euclid's first axiom, the things which are equal to equal things are equal to one another.

Therefore, $\angle 1 = \angle 2$