

# Mathematics

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(Chapter – 5) (Introduction to Euclid’s Geometry)(Exemplar Problems)  
(Class – IX)

## Exercise 5.3

Solve each of the following question using appropriate Euclid’s axiom:

### Question 5:

In the Fig.5.5, we have X and Y are the mid-points of AC and BC and  $AX = CY$ . Show that  $AC = BC$ .

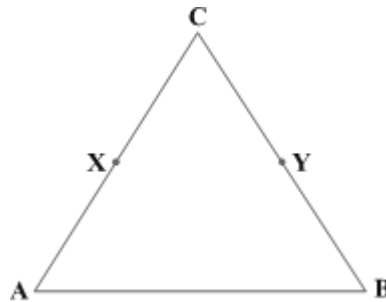


Fig. 5.5

### Answer 5:

Given that X is the mid – point of AC

$$\therefore AX = CX = \frac{1}{2} AC$$

$$\Rightarrow 2AX = 2CX = AC$$

....(i)

and Y is the mid – point of BC

$$\therefore BY = CY = \frac{1}{2} BC$$

$$\Rightarrow 2BY = 2CY = BC$$

....(ii)

Also given that

$$AX = CY$$

....(iii)

According to Euclid’s axiom, things which are double of the same things are equal to one Another.

From equation (iii), we get

$$\Rightarrow \begin{array}{l} 2AX = 2CY \\ AC = BC \end{array} \quad \text{[from (i) and (ii)]}$$

