



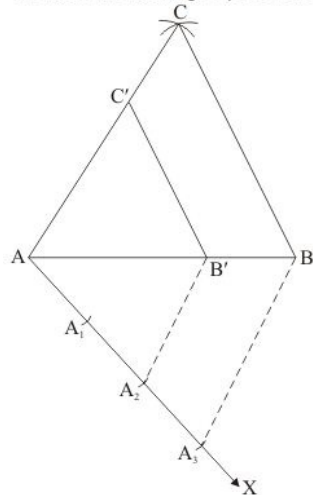
Constructions Ex 11.2 Q1

Answer :

Given that

Construct a triangle of sides **4 cm, 5 cm and 6 cm** and then a triangle similar to it whose sides are $\left(\frac{2}{3}\right)$ of the corresponding sides of it.

We follow the following steps to construct the given



Step of construction

Step: I- First of all we draw a line segment $AB = 4 \text{ cm}$.

Step: II- With A as centre and radius $= AC = 6 \text{ cm}$, draw an arc.

Step: III- With B as centre and radius $= BC = 5 \text{ cm}$, draw an arc, intersecting the arc drawn in step II at C.

Step: IV- Joins AC and BC to obtain $\triangle ABC$.

Step: V- Below AB, makes an acute angle $\angle BAX = 60^\circ$.

Step: VI- Along AX, mark off three points A_1, A_2 and A_3 such that $AA_1 = A_1A_2 = A_2A_3$.

Step: VII- Join A_3B .

Step: VIII- Since we have to construct a triangle each of whose sides is two-third of the corresponding sides of $\triangle ABC$.

So, we take two parts out of three equal parts on AX from point A_2 draw $A_2B' \parallel A_3B$, and meeting AB at B' .

Step: IX- From B' draw $B'C' \parallel BC$, and meeting AC at C' .

Thus, $\triangle ABC'$ is the required triangle, each of whose sides is two third of the corresponding sides of $\triangle ABC$.

Constructions Ex 11.2 Q2

Answer :

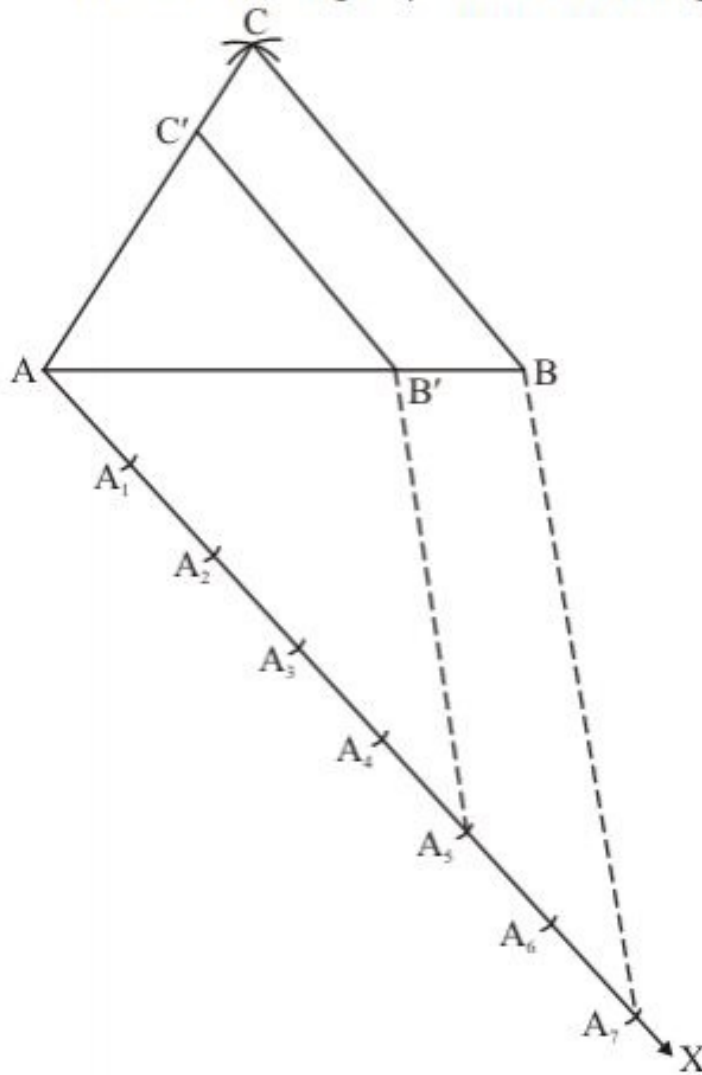
Given that

$AB = 5 \text{ cm}, BC = 7 \text{ cm}$ and $\angle ABC = 50^\circ$

Construct a triangle similar to a triangle ABC such that each of sides is $\left(\frac{5}{7}\right)^{\text{th}}$ of the corresponding

sides of triangle ABC .

We follow the following steps to construct the given



Step of construction

Step: I- First of all we draw a line segment $AB = 5 \text{ cm}$.

Step: II- With B as centre and draw an angle $\angle ABY = 50^\circ$.

Step: III- With B as centre and radius $= BC = 7 \text{ cm}$, draw an arc, cut the line BY drawn in step II at C .

Step: IV- Joins AC to obtain $\triangle ABC$.

Step: V- Below AB , makes an acute angle $\angle BAX = 60^\circ$.

Step: VI- Along AX , mark off seven points $A_1, A_2, A_3, A_4, A_5, A_6$ and A_7 such that

$$AA_1 = A_1A_2 = A_2A_3 = A_3A_4 = A_4A_5 = A_5A_6 = A_6A_7$$

Step: VII- Join A_7B .

Step: VIII- Since we have to construct a triangle each of whose sides is $\left(\frac{5}{7}\right)^{\text{th}}$ of the corresponding sides of $\triangle ABC$.

So, we take five parts out of seven equal parts on AX from point A_5 draw $A_5B' \parallel A_7B$, and meeting AB at B' .

Step: IX- From B' draw $B'C' \parallel BC$, and meeting AC at C'

Thus, $\triangle ABC'$ is the required triangle, each of whose sides is $\left(\frac{5}{7}\right)^{\text{th}}$ of the corresponding sides of $\triangle ABC$.

***** END *****