



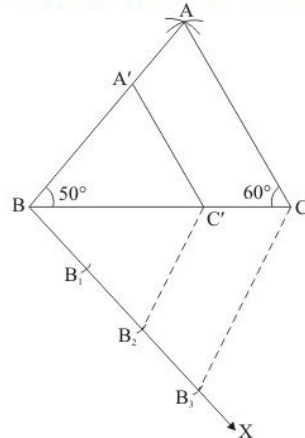
Constructions Ex 11.2 Q3

Answer :

Given that

Construct a triangle of given data, $BC = 6\text{ cm}$, $\angle B = 50^\circ$ and $\angle C = 60^\circ$ and then a triangle similar to it whose sides are $\left(\frac{2}{3}\right)$ 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 $BC = 6\text{ cm}$.

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

Step: III- With C as centre draw an angle $\angle C = 60^\circ$ which intersecting the line drawn in step II at A .

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

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

Step: VI -Along BX , mark off three points B_1, B_2 and B_3 such that $BB_1 = B_1B_2 = B_2B_3$

Step: VII -Join B_3C .

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 BX from point B_2 draw $B_2C' \parallel B_3C$, and meeting BC at C' .

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

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

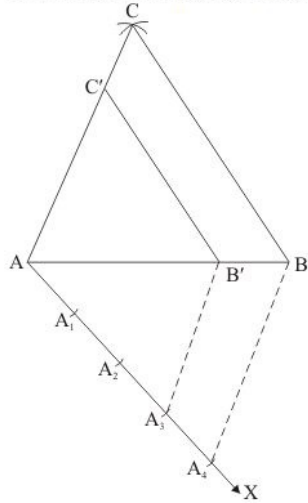
Constructions Ex 11.2 Q4

Answer :

Given that

Construct a triangle of sides $AB = 4\text{ cm}$, $BC = 6\text{ cm}$ and $AC = 5\text{ cm}$ and then a triangle similar to it whose sides are $\left(\frac{3}{4}\right)^{\text{th}}$ 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 $AB = 4\text{ cm}$.

Step: II- With A as centre and radius = $AC = 5\text{ cm}$, draw an arc.

Step: III -With B as centre and radius = $BC = 6\text{ cm}$, 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 four points A_1, A_2, A_3 and A_4 such that $AA_1 = A_1A_2 = A_2A_3 = A_3A_4$.

Step: VII -Join A_4B .

Step: VIII -Since we have to construct a triangle each of whose sides is $\left(\frac{3}{4}\right)^{\text{th}}$ of the corresponding sides of $\triangle ABC$.

So, we take three parts out of four equal parts on AX from point A_3 draw $A_3B' \parallel A_4B$, and meeting AB at B'.

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

Thus, $\triangle A'B'C'$ is the required triangle, each of whose sides is $\left(\frac{3}{4}\right)^{\text{th}}$ of the corresponding sides of $\triangle ABC$.

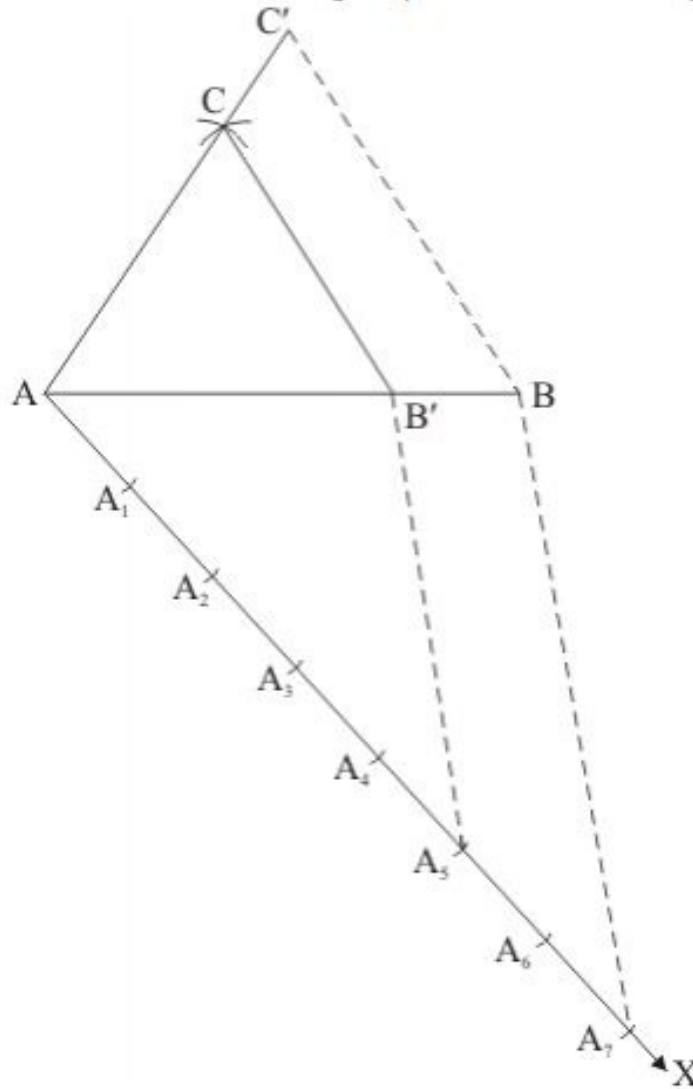
Constructions Ex 11.2 Q5

Answer :

Given that

Construct a triangle of sides $AB = 5\text{ cm}$, $BC = 6\text{ cm}$ and $AC = 7\text{ cm}$ and then a triangle similar to it whose sides are $\left(\frac{7}{5}\right)^{\text{th}}$ 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 A as centre and radius $AC = 7 \text{ cm}$, draw an arc.

Step: III- With B as centre and radius $= BC = 6 \text{ cm}$, 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 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_3B .

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

So, we draw a line A_3B' on AX from point A_3 which is $A_3B' \parallel AB$, and meeting AB at B'.

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

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

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