



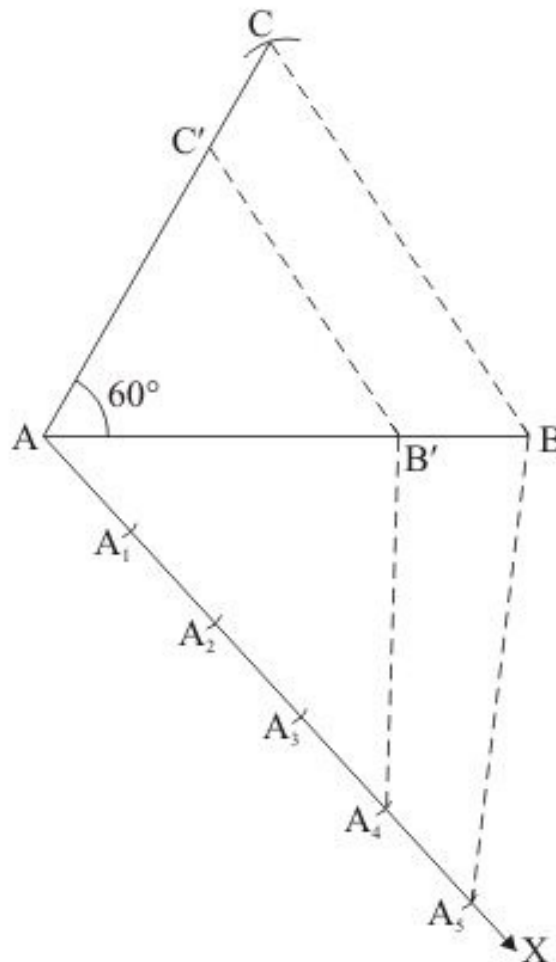
Constructions Ex 11.2 Q11

Answer :

Given that

Construct a $\triangle ABC$ of given data, $AB = 4.6\text{ cm}$, $BC = 5.1\text{ cm}$ and $\angle A = 60^\circ$ and then a triangle similar to it whose sides are $\left(4:5 = \frac{4}{5}\right)^{\text{th}}$ 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 $AB = 4.6\text{ cm}$.

Step: II- With A as centre draw an angle $\angle A = 60^\circ$.

Step: III- With B as centre and radius $= BC = 5.1\text{ cm}$, draw an arc, intersecting the arc drawn in step II at C.

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

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

Step: VI- Along AX, mark off five points A_1, A_2, A_3, A_4 and A_5 such that $AA_1 = A_1A_2 = A_2A_3 = A_3A_4 = A_4A_5$.

Step: VII- Join A_5B .

Step: VIII- Since we have to construct a triangle each of whose sides is $\left(\frac{4}{5}\right)^{\text{th}}$ of the corresponding sides of $\triangle ABC$.

So, we take four parts out of five equal parts on AX from point A_4 draw $A_4B' \parallel A_5B$, and meeting AB at B' .

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

Thus, $\triangle A_4B'C'$ is the required triangle, each of whose sides is $\left(\frac{4}{5}\right)^{\text{th}}$ of the corresponding sides of $\triangle ABC$.

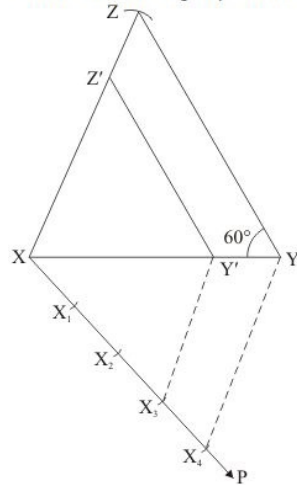
Constructions Ex 11.2 Q12

Answer :

Given that

Construct a $\triangle XYZ$ of given data, Let $XY = 5 \text{ cm}$, $YZ = 6 \text{ cm}$ and $\angle Y = 60^\circ$ and then a triangle similar to it whose sides are $\left(\frac{3}{4}\right)^{\text{th}}$ of the corresponding sides of $\triangle XYZ$.

We follow the following steps to construct the given



Step of construction

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

Step: II- With Y as centre draw an angle $\angle Y = 60^\circ$.

Step: III- With Y as centre and radius = $YZ = 6 \text{ cm}$, draw an arc.

Step: IV- Join XZ to obtain $\triangle XYZ$.

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

Step: VI -Along XP mark off four points X_1, X_2, X_3 and X_4 such that $XX_1 = X_1X_2 = X_2X_3 = X_3X_4$

Step: VII- Join X_4Y .

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 $\triangle XYZ$.

So, we take three parts out of four equal parts on XP from point X_3 draw $X_3Y' \parallel X_4Y$, and meeting XY at Y' .

Step: IX- From Y' draw $Y'Z' \parallel YZ$, and meeting XZ at Z' .

Thus, $\triangle XY'Z'$ is the required triangle, each of whose sides is $\left(\frac{3}{4}\right)^{\text{th}}$ of the corresponding sides of $\triangle XYZ$.

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