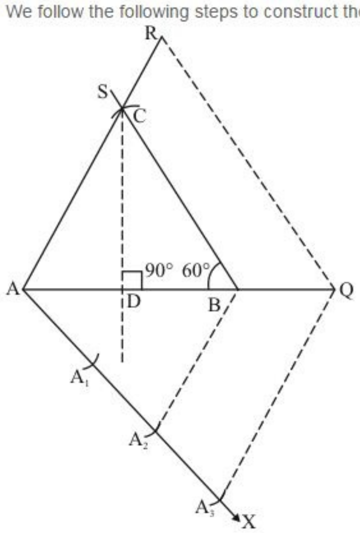
Constructions Ex 11.2 Q8

Answer :

Given that

Construct a triangle ΔABC in which let $AB = 5\text{cm}$, $\angle B = 90^0$ and altitutde $CD = 3\text{cm}$, and then a triangle ΔAQR similar to it whose sides are $\left(1.5\,\text{times} = \frac{3}{2}\right)$ of the corresponding sides of ΔACB.

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 $\angle B = 60^0$.

Step: III -From point *A* and *B* construct altitutde $CD = 3\text{cm}$, which cut the line *BS* at point *C*

Step: IV- Join *AC* to obtain ΔABC.

Step: V- Below *AB*, makes an acute angle $\angle BAX = 60^0$.

Step: VI- Along *AX*, mark off five points $A_1, A_2 \text{and}\ A_3$ such that $AA_1 = A_1A_2 = A_2A_3$

Step: VII -Join A_2B.

Step: VIII -Since we have to construct a triangle ΔAQR each of whose sides is $\left(1.5\,\text{times} = \frac{3}{2}\right)$ of the corresponding sides of ΔABC.

So, we draw a line A_3Q on *AX* from point A_3 which is $A_3Q \| A_2B$, and meeting *AB* at *Q*.

Step: IX- From Q point draw $QR \| BC$, and meeting *AC* at *R*

Thus, ΔAQR is the required triangle, each of whose sides is $\left(1.5\,\text{times} = \frac{3}{2}\right)$ of the corresponding sides of ΔABC.

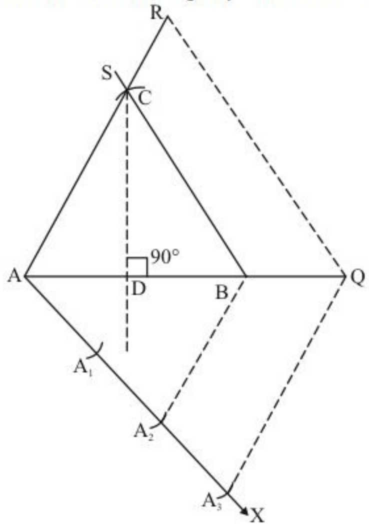
Constructions Ex 11.2 Q9

Answer :

Given that

Construct an isosceles triangle ABC in which *AB* = *BC* = 6 cm and altitude = 4 cm then another triangle similar to it whose sides are $\frac{3}{4}$ 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* = 6 cm.

Step: II- With *B* as centre and radius = *BC* = 6 cm, draw an arc.

Step: III- From point *A* and *B* construct altitutde $CD = 4\,\text{cm},$ which cut the line *BS* at point *C*

Step: IV -Join *AC* to obtain ΔABC.

Step: V- Below *AB*, makes an acute angle $\angle BAX = 60^0$.

Step: VI -Along *AX*, mark off five points $A_1, A_2 \text{and } A_3$ such that $AA_1 = A_1A_2 = A_2A_3$

Step: VII- Join A_2B.

Step: VIII -Since we have to construct a triangle ΔAQR each of whose sides is $\left(1.5\,\text{times}{=}\,3\!/\!_2\right)$ of the corresponding sides of ΔABC.

So, we draw a line A_3Q on *AX* from point A_3 which is $A_3Q \| A_2B,$ and meeting *AB* at *Q*.

Step: IX -From *Q* point draw $QR \| BC,$ and meeting *AC* at *R*

Thus, ΔAQR is the required triangle, each of whose sides is $\left(3\!/\!_2\right)$ of the corresponding sides of ΔABC.

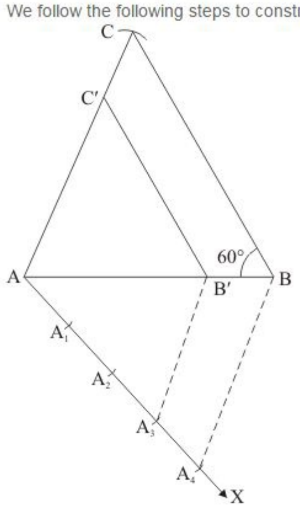
Constructions Ex 11.2 Q10

Answer :

Given that

Construct a ΔABC of given data, $AB = 5\,\text{cm}, BC = 6\,\text{cm}\,\text{and}\,\angle ABC{=}60^0$ and then a triangle similar to it whose sides are $\left(3\!/\!_4\right)^{\text{th}}$ of the corresponding sides of ΔABC.

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 draw an angle $\angle B = 60^0$.

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

Step: IV- Join *AC* to obtain ΔABC.

Step: V -Below *AB*, makes an acute angle $\angle BAX = 60^0$.

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 $\left(3/4\right)^{\text{th}}$ of the corresponding sides of ΔABC.

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

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

Thus, $\Delta AB'C'$ is the required triangle, each of whose sides is $\left(3/4\right)^{\text{th}}$ of the corresponding sides of ΔABC.

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