

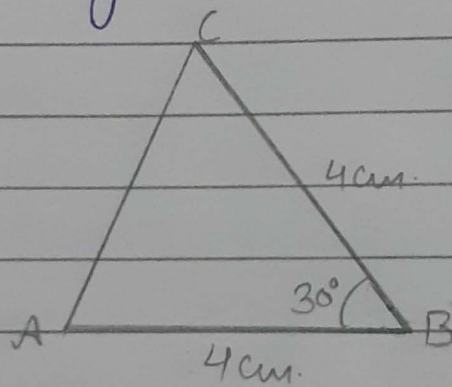
Construction of a triangle using SAS Criterion

Exercise - 10.3

- ① Construct $\triangle ABC$ such that $AB = 4\text{ cm}$, $\angle B = 30^\circ$, $BC = 4\text{ cm}$. Also name the type of this triangle on the basis of sides.

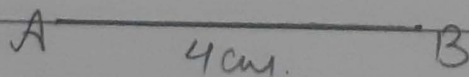
Solution:-

Step 1:- Draw a rough sketch of $\triangle ABC$ with given measures.

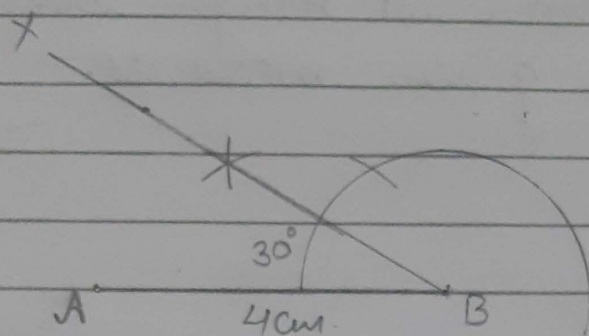


Rough Sketch

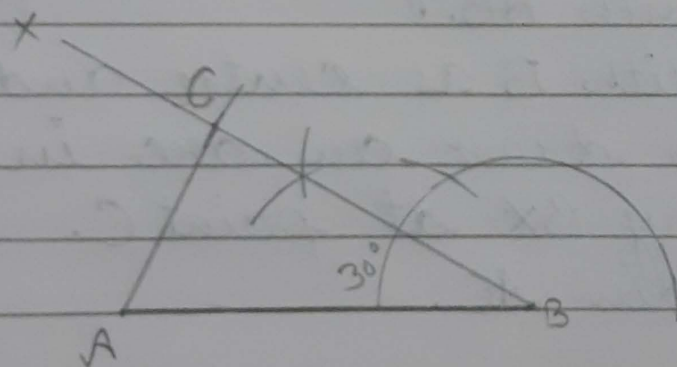
Step 2:- Draw a line segment $\overline{AB}$ of length 4 cm.



Step 3:- With the help of Compass, at B, draw a ray BX making an angle 30° with AB.



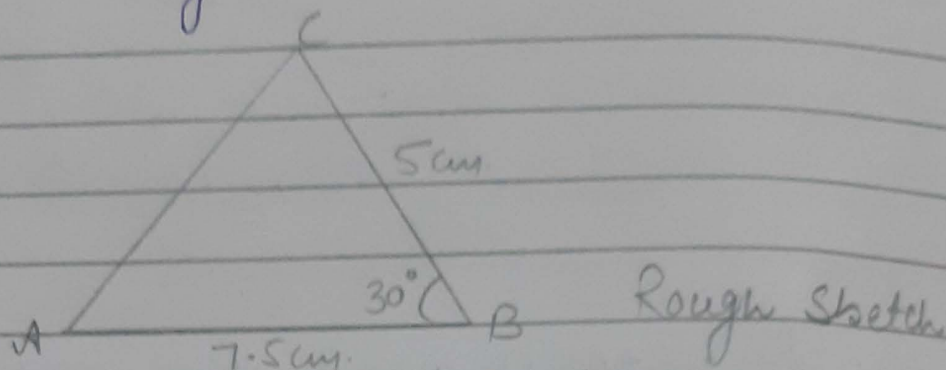
Step 4:- with B as centre and radius 4cm, draw an arc intersecting the ray BX at point C. Then, join AC.



Hence, $\triangle ABC$ is required triangle.

- ② Construct $\triangle ABC$ with $AB = 7.5\text{cm}$, $BC = 5\text{cm}$ and $\angle B = 30^\circ$

Solution:- [Step 1] :- Draw a rough sketch of $\triangle ABC$ with given measures.

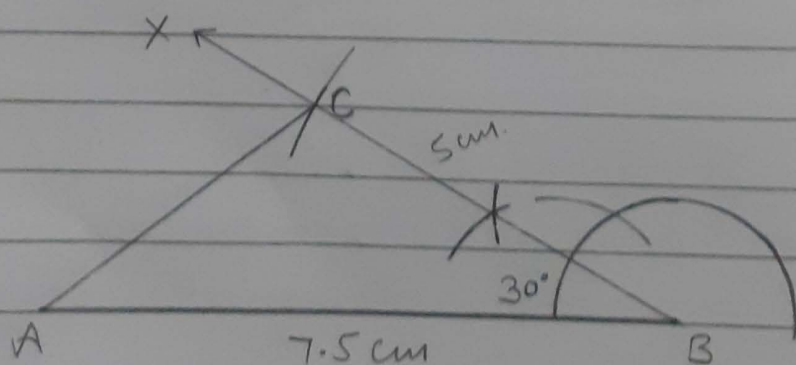


[Step 2] :- Draw a line segment AB of length 7.5cm .

[Step 3] :- With the help of Compass, at B , draw a ray BX making an angle 30° with AB .

[Step 4] :- With B as centre and radius 5cm , draw an arc intersecting the ray BX at point C .

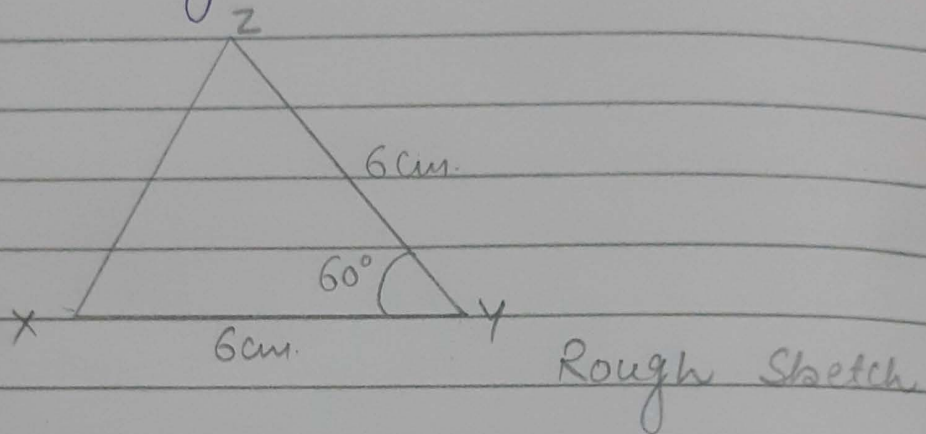
[Step 5] :- Join AC .



Hence, $\triangle ABC$ is required triangle.

- ③ Construct a triangle XYZ such that $XY = 6\text{cm}$, $YZ = 6\text{cm}$ and $\angle Y = 60^\circ$. Also name the type of this triangle.

Solution: Step 1:- Draw a rough sketch of $\triangle XYZ$ with given measures.

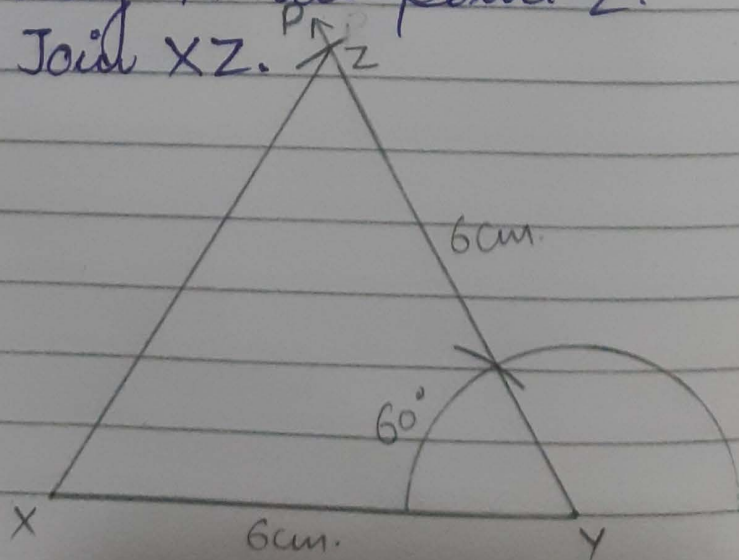


Step 2:- Draw a line segment XY of length 6cm.

Step 3:- With the help of Compass, at Y, draw a ray YP making an angle 60° with XY.

Step 4:- With Y as centre and radius 6cm, draw an arc intersecting the ray YP at point Z.

Step 5:- Join XZ.



Hence $\triangle XYZ$ is required triangle.

4) Which of the following triangle can be constructed using SAS criterion.

- a) $AB = 5\text{cm}$, $BC = 5\text{cm}$, $CA = 6\text{cm}$.
- ☒ b) $AB = 5\text{cm}$, $BC = 5\text{cm}$, $\angle B = 40^\circ$
- c) $\angle A = 60^\circ$, $\angle B = 60^\circ$, $\angle C = 60^\circ$
- d) $BC = 5\text{cm}$, $\angle B = \angle C = 45^\circ$

Answer:- b) $AB = 5\text{cm}$, $BC = 5\text{cm}$, $\angle B = 40^\circ$