ASSIGNMENT-3

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1 Question:-

In $\triangle$ABC, a=6 ,$\angle$B = 60° and b-c=2. sketch the triangle.

2 Solution:-

Given, a=6 , $\angle$B = 60° and b-c=2.
Using triangle inequality property, (To check possibility of triangle.)

$$b + c > a \tag{1}$$

but,

$$b - c = 2 \tag{2}$$

b=c+2

Therefore,
2c+2>a
2(c+1) >6
c >2

Also using 2) eq, c=b-2
Therefore,
2b-2>a
2(b-1) >6
b >4

Hence,$\triangle$ABC is having sides:- a=6, b >4, c >2.

2.1 Steps of Construction:-

- Draw a line BC of length a=6.
- Taking B as centre draw a line at 60° with BC.
- Taking C as centre draw an arc at the distance of as b=x.
- Name the point where the arc and above line intersect as A.
- Join AB and AC.
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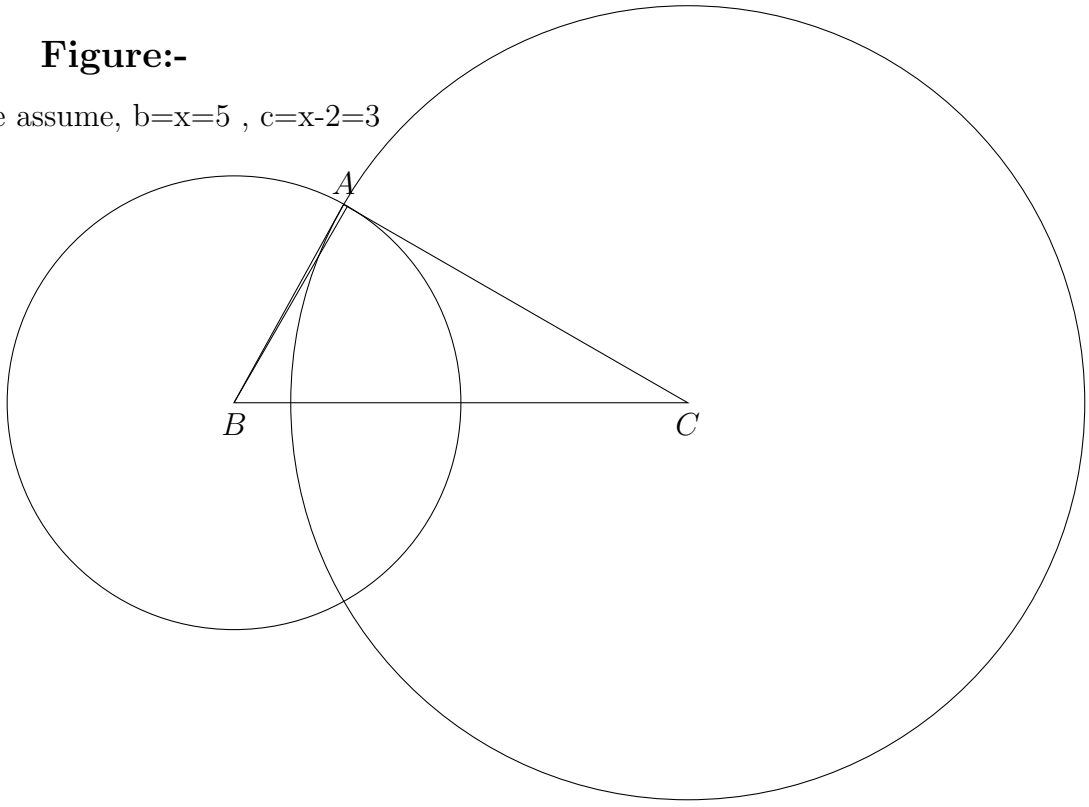
- Therefore, BC=a=6, AC=b=x=5(say), AB=c=x-2=3(say)

2.2 Figure:-

Here assume, b=x=5 , c=x-2=3



2.3 Conclusion:-

So with given parameters as a=6, ∠B=60°, b-c=2
we can have many no of triangles but these triangles are possible only when

b >4 and c >2.