Chapter 11 Triangles and its Properties Ex 11.4

Question 1.

Is it possible to have a triangle with the following sides?

(i) 2 cm, 3 cm, 5 cm

(ii) 2.5 cm, 4.5 cm, 8 cm

(iii) 10.2 cm, 5.8 cm, 4.5 cm

(iv) 3.4 cm, 4.7 cm, 6.2 cm

Solution:

(i) 2 cm, 3 cm, 5 cm

We know that in a triangle,

the sum of any two sides is greater than its third side.

Now, 2 cm, 3 cm, 5 cm

It is not possible to draw the a triangle.

(ii) 2.5 cm, 4.5 cm, 8 cm

2.5 + 4.5 cm = 7 cm < 8 cm

It is also not possible to draw the triangle.

(iii) 10.2 cm, 5.8 cm, 4.5 cm

5.8 + 4.5 = 10.3 > 10.2 cm

It is possible to draw the triangle.

(iv) 3.4 cm, 4.7 cm, 6.2 cm

3.4 + 4.7 = 8.1 > 6.2 cm

It is possible to draw the triangle.

Question 2.

If the lengths of two sides of a triangle are 7 cm and 10 cm, then what can be the length of the third side?

Solution:

Length of two sides of a triangle is 7 cm and 10 cm.

In order to draw a triangle,

the third side must be less than the sum of these two sides in

7 cm + 10.2 cm = 17.2 cm

Question 3.

We know that in a triangle, the sum of lengths of any two sides is greater than the length of the third side. Is the sum of any angles of a triangle also greater than the third angle? If no, draw a rough sketch to show such a case.

Solution:

In a triangle, the sum of any two sides must be greater than its third side but in case of its angles. It is not necessary that the sum of any two angles be

more than its third angle.

Such as in this triangle sum of any two angles is less than its third angle.

Such as $30° + 20° = 50° < 130°$