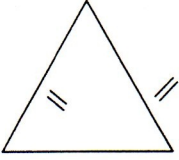


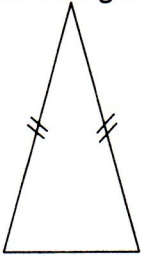
Angles in triangles

Triangle: A closed figure formed by the 3 straight lines is triangle. There are different types of triangle.

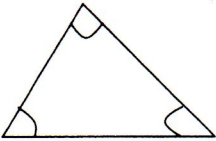
1) **Equilateral Triangle** : All three sides are equal. All three angles are equal to 60 degree.



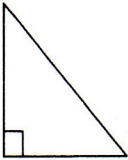
2) **Isosceles triangle** : Two sides of a triangle are equal. Base angles of the isosceles triangle are equal.



3) **Scalene triangle**: None of the sides are equal.



4) **Right angled triangle**: Triangle having 1 right angle is called the right angle triangle.



Properties of triangle: All three angles of a triangle sum 180 degree. If two angles of triangle are known then we can find the 1 unknown angle. If angles a, b , and c are three interior angles of a triangle then,
 $a + b + c = 180$ degree.

Example. Find the unknown angles from the figure.

$$x^0 + 110^0 = 180 \text{ (Supplementary angles)}$$

$$x = 180^0 - 110^0$$

$$x = 70^0$$

Again,

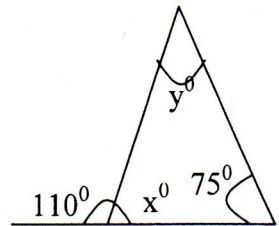
$$x + 75 + y^0 = 180^0 \text{ (Angles in a triangle add up to } 180^0 \text{)}$$

$$70^0 + 75^0 + y = 180$$

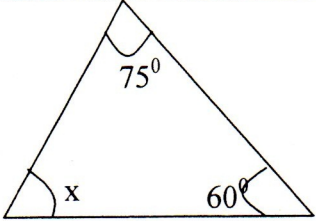
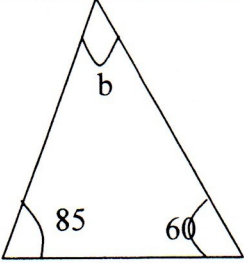
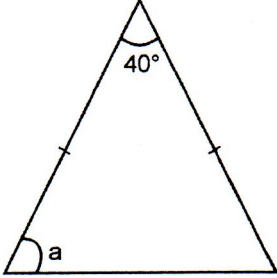
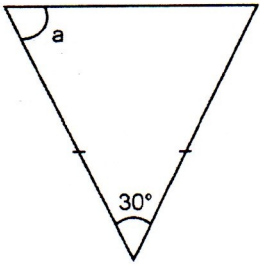
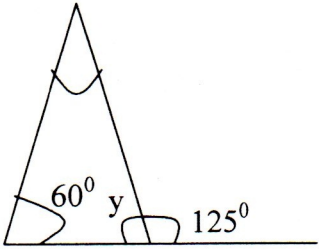
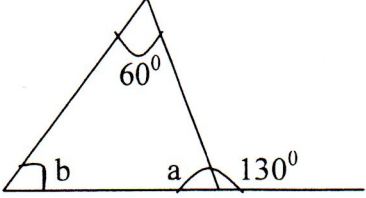
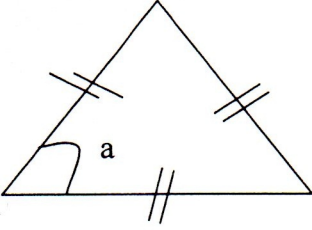
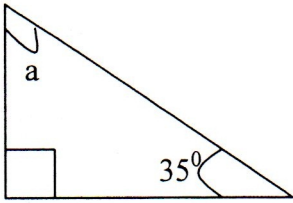
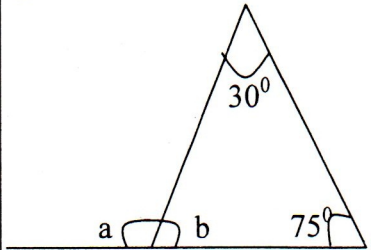
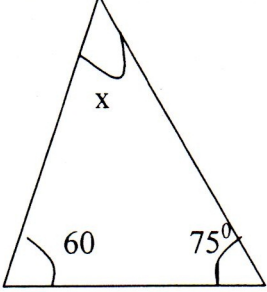
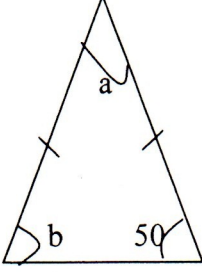
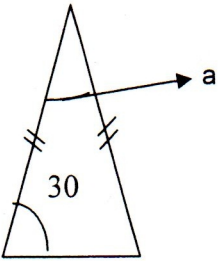
$$145 + y = 180^0$$

$$y = 180^0 - 145^0$$

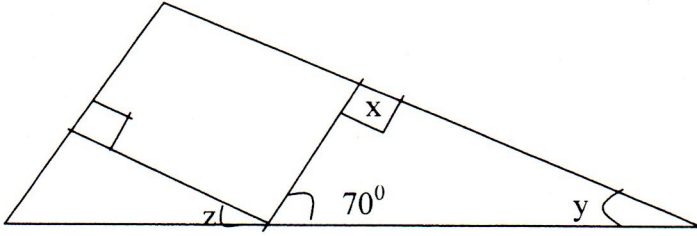
$$y = 35^0$$



Exercise : Find the unknown angles from the figure.

1		2		3	
4		5		6	
7		8		9	
10		11		12	

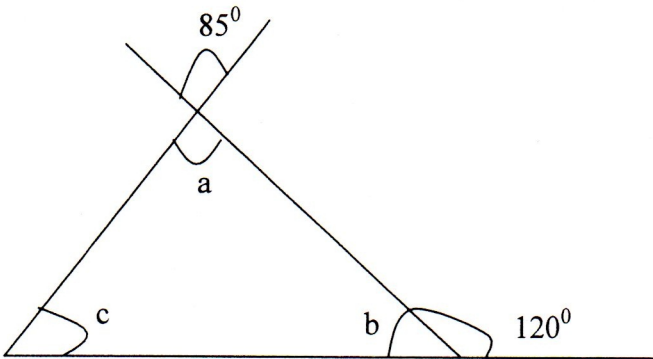
13)



The rectangle exactly fits inside the triangle .
Work out the sizes of angles x, y, and z.

x= _____ degree, y= _____ degree z= _____ degree.

14).



Write the value of the following angles. Also write the reason.

a= _____ b= _____ c= _____

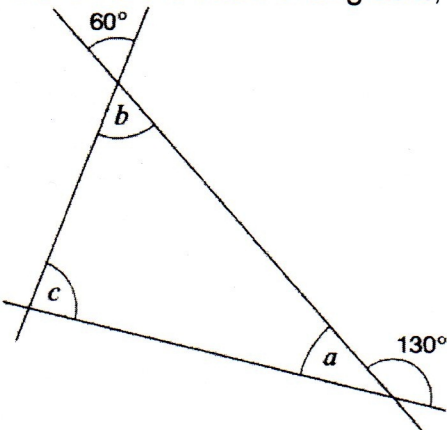
15) If angles a, b, and c are the three interior angles of a triangle, then find the unknown angles.

a) If $a = 35^\circ$ and $b = 60^\circ$ find c . _____ b) If $a = 65^\circ$ and $c = 65^\circ$ find b . _____

c) If $c = 45^\circ$ and $a = 90^\circ$ find b . _____ d) If $c = 35^\circ$ and $b = 110^\circ$ find a . _____

16) The diagram shows three straight lines.

Work out the sizes of angles a, b and c



a= _____ b= _____ c= _____