

Maths Class – 7 Triangles and their Properties -2

1. Rahul drives 41 km towards North and then 40 km to the East. Find the distance between the starting and terminating point.

2. The sides of rectangle are 12 m and 16 m. What is the length of its diagonal?

3. Nisha walks 15 m West and 8 m North to reach the opposite corner of a rectangular field. Monika walked from the same point diagonally to the opposite corner. What is the distance covered by Monika?

4. Which of the following angles can form triangles?

a)  $\angle A = 100^\circ$ ,  $\angle B = 40^\circ$  and  $\angle C = 40^\circ$

b)  $\angle P = 10^\circ$ ,  $\angle Q = 150^\circ$  and  $\angle R = 10^\circ$

5. If the angles of a triangle ABC are in the ratio 1:2:5, find the measures of each angles .

6. In a triangle, one angle is  $80^\circ$  and the other two angles are such that one is lesser in measure than the other by  $20^\circ$ . What are the measures of these angles?

7. In a triangle ABC, A is  $50^\circ$  more than B and C is  $20^\circ$  less than B. What are the angles of a triangle?

8. The hypotenuse of a right angled triangle is 25 cm. if the length of the base is 7 cm, what is the length of altitude of the triangle?

9. The roof of a building is 6 m high. A rope is tied from the roof to a peg on the ground 8 m way from the wall. What is the shortest length of the rope?

10. The following triplets form the length of sides of a triangle. State which of them are right angled triangles.

a) 9, 60, 61    b) 1, 40, 41    (c) 7, 24, 25    (d) 12, 13, 15

11. Find k if (8,15,k) is a Pythagorean triplet.

12. Find the length of the hypotenuse of the right angled triangle ABC where  $AB = 3$  m ,  $BC = 4$  m and  $\angle B = 90^\circ$ .

13. In  $\triangle ABC$ , A tree 9 m tall is broken at a height of 4 m from the ground and its top touches the ground. Find the distance of the point where the top touches the ground from the base at the tree.

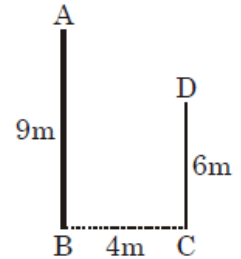
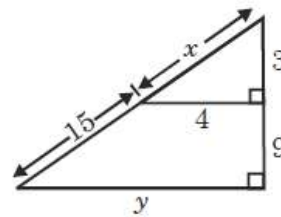
14. Find the perimeter of rectangle having one side 9 cm and a diagonal 41 cm.

15. In a triangle  $2\angle A = 3\angle B = 6\angle C$  then find the measure of all angles of triangle.

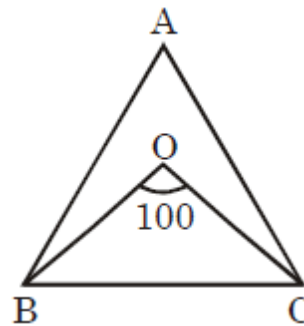
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16. (i) Find the value of  $x$  and  $y$ .(fig-01)

(ii) Find the distance from A to D (fig. 02)



17. In the given figure  $AB = AC$ . OB and OC are the angle bisectors of B and C. Find  $\angle ABC$ ,  $\angle ACB$  and  $\angle BAC$ .



18. Fill in the blanks

(i) Incentre of an obtuse-angled triangle lies in ..... of triangle.

(ii) Orthocentre of an obtuse-angled triangle lies in ..... of triangle.

(iii) Median of an obtuse-angled triangle lies in ..... of triangle.

(iv) Perpendicular bisectors of the sides of a triangle meet at .....

19. Find the angles of a triangle which are in the ratio 4 : 3 : 2.

20. Each of the two equal angles of an isosceles triangle is twice the third angle. Find the angles of the triangle.