

Problems On Triangles

1. Find the length of the inradius of a triangle with sides 15 cm, 112 cm, and 113 cm.

- A) 7 cm B) 14 cm
C) 16 cm D) 18 cm

2. Find the length of the inradius of a triangle with sides 21 cm, 220 cm, and 221 cm.

- A) 13 cm B) 11 cm
C) 12 cm D) 10 cm

3. Find the length of the circumradius of a triangle with sides 11 cm, 60 cm, and 61 cm.

- A) 32 cm B) 31 cm
C) 30.5 cm D) 33.5 cm

4. Find the length of the circumradius of a triangle with sides 13 cm, 84 cm, and 85 cm.

- A) 40 cm B) 41.5 cm
C) 42 cm D) 42.5 cm

5. If the difference between the measures of the two smaller angles of a right-angled triangle is 10° , then the smallest angle is:

- A) 38° B) 39° C) 40° D) 41°

6. In a triangle, the exterior angles at two vertices are 110° and 125° . What is the measure of the third interior angle?

- A) 35° B) 40° C) 45° D) 55°

7. The perimeter of a triangle is 40 cm. If two of its sides are 15 cm and 12 cm, what is the length of the third side?

- A) 10 cm B) 11 cm
C) 12 cm D) 13 cm

8. A triangle has angles in the ratio $2 : 3 : 4$. What is the measure of the largest angle?

- A) 80° B) 90° C)
 100° D) 120°

9. In a triangle, one of the angles is three times another, and the third angle is 20° more than the smallest angle. What is the measure of the largest angle?

- A) 96° B) 100°
C) 105° D) 110°

10. A triangle has sides 8 cm, 15 cm, and 17 cm. What type of triangle is this?

- A) Equilateral B) Isosceles
C) Right-Angled D) Scalene

11. The perimeter of a triangle is 54 cm. The three sides are in the ratio $2 : 3 :$

4. What is the length of the longest side?

- A) 18 cm
- B) 20 cm
- C) 22 cm
- D) 24 cm

12. A triangular park has a perimeter of 48 meters. The longest side is 20 meters, and the second longest side is 5 meters shorter than the longest side. What is the shortest side of the triangle?

- A) 8 meters
- B) 9 meters
- C) 10 meters
- D) 13 meters

13. A right-angled triangle has one leg measuring 24 cm and the hypotenuse measuring 26 cm. Find the length of the other leg.

- A) 10 cm
- B) 12 cm
- C) 14 cm
- D) 16 cm

14. A triangle has sides measuring 13 cm, 14 cm, and 15 cm. Find the area of the triangle.

- A) 78 cm²
- B) 84 cm²
- C) 90 cm²
- D) 96 cm²

15. A triangle has sides measuring 25 cm, 39 cm, and 56 cm. Find the length of its inradius.

- A) 6 cm
- B) 7 cm
- C) 8 cm
- D) 9 cm

16. A triangle has sides measuring 28 cm, 45 cm, and 53 cm. Find the length of its circumradius.

- A) 22.5 cm
- B) 24 cm
- C) 26.5 cm
- D) 28 cm

17. In a triangle ABC, the length of median AD from A to BC is 20 cm. The sides of the triangle are AB = 25 cm and AC = 30 cm. Find the length of BC using Apollonius theorem.

- A) $\sqrt{1278}$ cm
- B) $\sqrt{1336}$ cm
- C) $\sqrt{1475}$ cm
- D) $\sqrt{1450}$ cm

18. In a triangle ABC, the sides are AB = 17 cm, AC = 25 cm, and BC = 28 cm. Find the length of the median AD, where D is the midpoint of BC.

- A) 12 cm
- B) 13 cm
- C) 14 cm
- D) None of these

19. In a triangle ABC, the sides are AB = 26 cm, AC = 24 cm, and BC = 10 cm. Find the length of the altitude from A to BC.

- A) 12 cm
- B) 13 cm
- C) 24 cm
- D) 25 cm

20. In a triangle ABC, the base BC = 16 cm, and the area of the triangle is 48 cm². Find the length of the altitude from A to BC.

- A) 5 cm
- B) 6 cm
- C) 7 cm
- D) 8 cm

Key

1-A, 2-D, 3-C, 4-D, 5-C, 6-D, 7-D, 8-A, 9-A, 10-C, 11-D, 12-D, 13-A, 14-B, 15-B, 16-C, 17-D, 18-D, 19-C, 20-B,