Class 10 Maths Chapter -8 : Introduction to Trigonometry

🟡**Multiple choice questions**

1. If sin θ = 3/5, then cos θ = _____ (2019)
   - A) 4/5
   - B) 3/4
   - C) 5/4
   - D) 1/5

2. The value of tan 45° is _____ (2018)
   - A) 0
   - B) 1
   - C) 1/√2
   - D) √2

3. If cos A = 4/5, then tan A = _____ (2020)
   - A) 3/4
   - B) 4/3
   - C) 3/5
   - D) 5/3

4. The value of $\sin^2 \theta + \cos^2 \theta$ is _____ (2017)
   - A) 0
   - B) 1
   - C) -1
   - D) 2

5. If tan θ = 1/√3, then θ = _____ (2019)
   - A) 30°
   - B) 45°
   - C) 60°
   - D) 90°

🔵**Short answer type**

6. Prove that $\sin^2 \theta + \cos^2 \theta = 1$. (2018)

7. If tan A = 4/3, find sin A and cos A. (2020)

8. Find the value of sin 30° cos 60° + cos 30° sin 60°. (2019)

9. Prove that $(1 - \cos^2 \theta) / \sin^2 \theta = 1$. (2017)

10. Find the value of tan 60° cos 30°. (2018)

11. If sin θ = 12/13, find cos θ and tan θ. (2019)

12. Prove that $(\sin A + \cos A)^2 = 1 + 2 \sin A \cos A$. (2018)

13. Find the value of (tan 45°) / (cosec 30°) + (sec 60°) / (cot 45°). (2017)

14. Prove that (cos A) / (1 - tan A) + (sin A) / (1 - cot A) = cos A + sin A. (2020)

15. If cos θ = 5/13, find sin θ and tan θ. (2019)

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🟢Long Answer type

16. Prove that (sin θ) / (1 + cos θ) + (1 + cos θ) / sin θ = 2 / sin θ. (2020)

17. A ladder is placed against a wall such that it just reaches the top of the wall. The foot of the ladder is 2.5 m away from the wall and the ladder is 6 m long. Find the angle made by the ladder with the ground. (2020)

18. A kite is flying at a height of 60 m above the ground. The string attached to the kite is temporarily tied to a point on the ground. The inclination of the string with the ground is 60°. Find the length of the string, assuming that there is no slack in the string. (2019)

19. From a point on the ground, the angles of elevation of the bottom and the top of a transmission tower fixed at the top of a 20 m high building are 45° and 60° respectively. Find the height of the tower. (2018)

20. Prove that sin (A + B) = sin A cos B + cos A sin B. (2020)

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🔴Competency Based

21. A tree is broken by the wind and its top touches the ground, making an angle of 30° with the ground. The distance from the foot of the tree to the point where the top touches the ground is 10 m. Find the height of the tree. (2019)

22. A man is standing on the deck of a ship, which is 10 m above water level. He observes the angle of elevation of the top of a hill as 60° and the angle of depression of the base of the hill as 30°. Calculate the distance of the hill from the ship and the height of the hill. (2018)

23. If sin θ = 3/5, find the value of (tan θ + sec θ). (2020)

24. Prove that (sin θ - cos θ + 1) / (sin θ + cos θ - 1) = 1 / (sec θ - tan θ). (2019)

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