

MATHEMATICS

CLASS 10

CHAPTER: INTRODUCTION TO TRIGONOMETRY

Practice Multiple Choice Questions (50 Questions with Answer Key)

Q1. If $\sin A = 4/5$, then $\tan A$ is:

- (A) $3/5$
- (B) $4/3$
- (C) $3/4$
- (D) $5/3$

Q2. The value of $2 \tan 30^\circ / (1 + \tan^2 30^\circ)$ is:

- (A) $\sin 60^\circ$
- (B) $\cos 60^\circ$
- (C) $\tan 60^\circ$
- (D) $\sin 30^\circ$

Q3. The value of $(1 - \tan^2 45^\circ) / (1 + \tan^2 45^\circ)$ is:

- (A) $\tan 90^\circ$
- (B) 1
- (C) $\sin 45^\circ$
- (D) 0

Q4. $\sin 2A = 2 \sin A$ is true when $A =$

- (A) 0°
- (B) 30°
- (C) 45°
- (D) 60°

Q5. $2 \tan 30^\circ / (1 - \tan^2 30^\circ)$ is equal to:

- (A) $\cos 60^\circ$
- (B) $\sin 60^\circ$
- (C) $\tan 60^\circ$
- (D) $\sin 30^\circ$

Q6. $9 \sec^2 A - 9 \tan^2 A$ is equal to:

- (A) 1
- (B) 9
- (C) 8
- (D) 0

Q7. $(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \operatorname{cosec} \theta)$ is equal to:

- (A) 0
- (B) 1
- (C) 2
- (D) -1

Q8. $(\sec A + \tan A)(1 - \sin A)$ is equal to:

- (A) $\sec A$
- (B) $\sin A$
- (C) $\operatorname{cosec} A$
- (D) $\cos A$

Q9. $(1 + \tan^2 A) / (1 + \cot^2 A)$ is equal to:

- (A) $\sec^2 A$
- (B) -1
- (C) $\cot^2 A$
- (D) $\tan^2 A$

Q10. If $\cos A = 7/25$, the value of $\tan A + \cot A$ is:

- (A) $625/168$
- (B) $168/625$
- (C) $24/25$
- (D) $25/24$

Q11. The value of $\sin 60^\circ \cos 30^\circ + \sin 30^\circ \cos 60^\circ$ is:

- (A) 0
- (B) 1
- (C) 2
- (D) $1/2$

Q12. The value of $2 \tan^2 45^\circ + \cos^2 30^\circ - \sin^2 60^\circ$ is:

- (A) 1
- (B) 2
- (C) 0
- (D) 1.5

Q13. If $\tan A = 1$, then the value of $2 \sin A \cos A$ is:

- (A) 1
- (B) 0
- (C) 2
- (D) $1/2$

Q14. In $\triangle ABC$, right-angled at B, $AB = 24$ cm, $BC = 7$ cm. The value of $\sin A$ is:

- (A) $7/25$
- (B) $24/25$
- (C) $7/24$
- (D) $25/7$

Q15. In $\triangle ABC$, right-angled at B, $AB = 24$ cm, $BC = 7$ cm. The value of $\cos C$ is:

- (A) $7/25$
- (B) $24/25$
- (C) $7/24$
- (D) $25/7$

Q16. If $15 \cot A = 8$, find $\sin A$:

- (A) $15/17$
- (B) $8/17$
- (C) $17/15$
- (D) $17/8$

Q17. If $\sec \theta = 13/12$, calculate $\cos \theta$:

- (A) $12/13$
- (B) $13/5$
- (C) $5/12$
- (D) $12/5$

Q18. If $\cot \theta = 7/8$, evaluate $(1 + \sin \theta)(1 - \sin \theta) / (1 + \cos \theta)(1 - \cos \theta)$:

- (A) $49/64$
- (B) $64/49$
- (C) $7/8$
- (D) $8/7$

Q19. If $3 \cot A = 4$, then $(1 - \tan^2 A)/(1 + \tan^2 A)$ is equal to:

- (A) $\cos^2 A - \sin^2 A$
- (B) $\sin^2 A - \cos^2 A$
- (C) 1
- (D) 0

Q20. In triangle PQR, right-angled at Q, $PR + QR = 25$ cm and $PQ = 5$ cm. Determine the value of $\sin P$:

- (A) $12/13$
- (B) $5/13$
- (C) $12/5$
- (D) $5/12$

Q21. The value of $\tan A$ is always less than 1.

- (A) True
- (B) False

- (C) Sometimes true
- (D) Not defined

Q22. $\sec A = 12/5$ for some value of angle A.

- (A) True
- (B) False
- (C) Sometimes true
- (D) Not defined

Q23. $\cos A$ is the abbreviation used for the cosecant of angle A.

- (A) True
- (B) False
- (C) Sometimes true
- (D) Not defined

Q24. $\cot A$ is the product of $\cot$ and A.

- (A) True
- (B) False
- (C) Sometimes true
- (D) Not defined

Q25. $\sin \theta = 4/3$ for some angle θ .

- (A) True
- (B) False
- (C) Sometimes true
- (D) Not defined

Q26. Value of $\sin 45^\circ$ is:

- (A) 1
- (B) $1/\sqrt{2}$
- (C) $\sqrt{3}/2$
- (D) $1/2$

Q27. Value of $\cos 90^\circ$ is:

- (A) 1
- (B) 0
- (C) undefined
- (D) $1/2$

Q28. Value of $\tan 60^\circ$ is:

- (A) 1
- (B) $\sqrt{3}$
- (C) $1/\sqrt{3}$
- (D) 0

Q29. Value of $\operatorname{cosec} 30^\circ$ is:

- (A) 1
- (B) 2
- (C) $1/2$
- (D) $2/\sqrt{3}$

Q30. Value of $\sec 45^\circ$ is:

- (A) 1
- (B) $\sqrt{2}$
- (C) 2
- (D) $1/\sqrt{2}$

Q31. Value of $\cot 0^\circ$ is:

- (A) 0
- (B) 1
- (C) undefined
- (D) $\sqrt{3}$

Q32. If $\sqrt{3} \tan \theta = 1$, then θ is:

- (A) 30°
- (B) 45°
- (C) 60°
- (D) 90°

Q33. If $2 \sin \theta = \sqrt{3}$, then θ is:

- (A) 30°
- (B) 45°
- (C) 60°
- (D) 90°

Q34. If $\tan \theta = \sqrt{3}$, then $\sec \theta$ is:

- (A) 2
- (B) 1
- (C) $1/2$
- (D) $2/\sqrt{3}$

Q35. The maximum value of $\sin \theta$ is:

- (A) 0
- (B) 1
- (C) 2
- (D) infinity

Q36. The minimum value of $\cos \theta$ (for $0 \leq \theta \leq 90^\circ$) is:

- (A) 0
- (B) 1
- (C) -1
- (D) infinity

Q37. The value of $(\sin^4 A - \cos^4 A)$ is equal to:

- (A) $\sin^2 A - \cos^2 A$
- (B) 1
- (C) 0
- (D) 2

Q38. $(1 - \sin^2 A) \times \sec^2 A$ is equal to:

- (A) 0
- (B) 1

- (C) -1
- (D) $\tan^2 A$

Q39. $(1 - \cos^2 A) \times \operatorname{cosec}^2 A$ is equal to:

- (A) 0
- (B) 1
- (C) -1
- (D) $\cot^2 A$

Q40. If $\sin A + \sin^2 A = 1$, then $\cos^2 A + \cos^4 A$ is equal to:

- (A) 0
- (B) 1
- (C) -1
- (D) 2

Q41. The value of $\tan 10^\circ \times \tan 80^\circ$ is:

- (A) 0
- (B) 1
- (C) 2
- (D) undefined

Q42. The value of $\cos 1^\circ \times \cos 2^\circ \times \dots \times \cos 100^\circ$ is:

- (A) 1
- (B) -1
- (C) 0
- (D) undefined

Q43. If $x = a \cos \theta$ and $y = b \sin \theta$, then $b^2 x^2 + a^2 y^2$ is:

- (A) $a^2 b^2$
- (B) ab
- (C) $a+b$
- (D) 1

Q44. If $x = r \sin A \cos C$, $y = r \sin A \sin C$ and $z = r \cos A$, then $x^2 + y^2 + z^2$ is:

- (A) r^2
- (B) r
- (C) 1
- (D) 0

Q45. The value of $(\sin \theta + \cos \theta)^2 + (\sin \theta - \cos \theta)^2$ is:

- (A) 1
- (B) 2
- (C) 0
- (D) 4

Q46. If $\sec A + \tan A = x$, then $\sec A$ is:

- (A) $(x^2 + 1)/2x$
- (B) $(x^2 - 1)/2x$
- (C) $x/2$
- (D) $2/x$

Q47. If $\operatorname{cosec} A - \cot A = q$, then $\operatorname{cosec} A$ is:

- (A) $(q^2 + 1)/2q$
- (B) $(q^2 - 1)/2q$
- (C) $q/2$
- (D) $2/q$

Q48. The value of $\tan 1^\circ \times \tan 2^\circ \times \dots \times \tan 89^\circ$ is:

- (A) 0
- (B) 1
- (C) -1
- (D) 2

Q49. If $\sin \theta = \cos \theta$, then the value of θ ($0^\circ < \theta < 90^\circ$) is:

- (A) 30°
- (B) 45°
- (C) 60°
- (D) 90°

Q50. What is the value of $(\operatorname{cosec}^2 30^\circ - \cot^2 30^\circ)$?

- (A) 0
- (B) 1
- (C) -1
- (D) 2

Answer Key

Q1: B	Q2: A	Q3: D	Q4: A	Q5: C
Q6: B	Q7: C	Q8: D	Q9: D	Q10: A
Q11: B	Q12: B	Q13: A	Q14: A	Q15: A
Q16: A	Q17: A	Q18: A	Q19: A	Q20: A
Q21: B	Q22: A	Q23: B	Q24: B	Q25: B
Q26: B	Q27: B	Q28: B	Q29: B	Q30: B
Q31: C	Q32: A	Q33: C	Q34: A	Q35: B
Q36: A	Q37: A	Q38: B	Q39: B	Q40: B
Q41: B	Q42: C	Q43: A	Q44: A	Q45: B
Q46: A	Q47: A	Q48: B	Q49: B	Q50: B