



The Wisdom Global School
Subject–Mathematics Class–IX
Topic- Trigonometry (extended)

Multiple choice Questions-

Mark the correct alternative in each of the following:

1. If $\sin \theta = x$ and $\sec \theta = y$, then $\tan \theta$ is equal to
(a) xy (b) x/y (c) y/x (d) $1/xy$
2. Given that $\sin \theta = \frac{a}{b}$, then $\tan \theta$ is equal to
(a) $\frac{b}{\sqrt{a^2 + b^2}}$ (b) $\frac{b}{\sqrt{b^2 - a^2}}$ (c) $\frac{a}{\sqrt{a^2 - b^2}}$ (d) $\frac{a}{\sqrt{b^2 - a^2}}$
3. If $4 \tan \beta = 3$, then $\frac{4 \sin \beta - 3 \cos \beta}{4 \sin \beta + 3 \cos \beta} =$
(a) 0 (b) $1/3$ (c) $2/3$ (d) $7/25$
4. If ΔABC right angled at B . If $\tan A = \sqrt{3}$, then $\cos A \cos C - \sin A \sin C = 0$
(a) -1 (b) 0 (c) 1 (d) $\sqrt{3}/2$
5. If the angle of ΔABC are in the ratio $1 : 1 : 2$ respectively (the largest angle being angle C), then the value of $\frac{\sec A}{\operatorname{cosec} B} - \frac{\tan A}{\cot B}$ is
(a) 0 (b) $1/2$ (c) 1 (d) $\sqrt{3}/2$
6. If θ is an acute angle such that $\cos \theta = \frac{3}{5}$, then $\frac{\sin \theta \tan \theta - 1}{2 \tan^2 \theta} =$
(a) $\frac{16}{625}$ (b) $\frac{1}{36}$ (c) $\frac{3}{160}$ (d) $\frac{160}{3}$
7. If $\tan \theta = \frac{a}{b}$, then $\frac{a \sin \theta + b \cos \theta}{a \sin \theta - b \cos \theta}$ is equal to
(a) $\frac{a^2 + b^2}{a^2 - b^2}$ (b) $\frac{a^2 - b^2}{a^2 + b^2}$ (c) $\frac{a + b}{a - b}$ (d) $\frac{a - b}{a + b}$
8. If $5 \tan \theta - 4 = 0$, then the value of $\frac{5 \sin \theta - 4 \cos \theta}{5 \sin \theta + 4 \cos \theta}$ is
(a) $\frac{5}{3}$ (b) $\frac{5}{6}$ (c) 0 (d) $\frac{1}{6}$
9. If $16 \cot x = 12$, then $\frac{\sin x - \cos x}{\sin x + \cos x}$ equals
(a) $\frac{1}{7}$ (b) $\frac{3}{7}$ (c) $\frac{2}{7}$ (d) 0
10. If $8 \tan x = 15$, then $\sin x - \cos x$ is equal to
(a) $\frac{8}{17}$ (b) $\frac{17}{7}$ (c) $\frac{1}{17}$ (d) $\frac{7}{17}$

11. If $\tan \theta = \frac{1}{\sqrt{7}}$, then $\frac{\operatorname{cosec}^2 \theta - \sec^2 \theta}{\operatorname{cosec}^2 \theta + \sec^2 \theta} =$
 (a) $\frac{5}{7}$ (b) $\frac{3}{7}$ (c) $\frac{1}{12}$ (d) $\frac{3}{4}$
12. If $\tan \theta = \frac{3}{4}$, then $\cos^2 \theta - \sin^2 \theta =$
 (a) $\frac{7}{25}$ (b) 1 (c) $-\frac{7}{25}$ (d) $\frac{4}{25}$
13. If θ is an acute angle such that $\tan^2 \theta = \frac{8}{7}$, then the value of $\frac{(1 + \sin \theta)(1 - \sin \theta)}{(1 + \cos \theta)(1 - \cos \theta)}$ is
 (a) $\frac{7}{8}$ (b) $\frac{8}{7}$ (c) $\frac{7}{4}$ (d) $\frac{64}{49}$
14. If $3 \cos \theta = 5 \sin \theta$, then the value of $\frac{5 \sin \theta - 2 \sec^3 \theta + 2 \cos \theta}{5 \sin \theta + 2 \sec^3 \theta - 2 \cos \theta}$ is
 (a) $\frac{271}{979}$ (b) $\frac{316}{2937}$ (c) $\frac{542}{2937}$ (d) none of these
15. If $\tan^2 45^\circ - \cos^2 30^\circ = x \sin 45^\circ \cos 45^\circ$, then $x =$
 (a) 2 (b) -2 (c) $-\frac{1}{2}$ (d) $\frac{1}{2}$
16. The value of $\cos^2 17^\circ - \sin^2 73^\circ$ is
 (a) 1 (b) $\frac{1}{3}$ (c) 0 (d) -1
17. The value of $\frac{\cos^3 20^\circ - \cos^3 70^\circ}{\sin^3 70^\circ - \sin^3 20^\circ}$ is
 (a) $\frac{1}{2}$ (b) $\frac{1}{\sqrt{2}}$ (c) 1 (d) 2
18. If $\frac{x \operatorname{cosec}^2 30^\circ \sec^2 45^\circ}{8 \cos^2 45^\circ \sin^2 60^\circ} = \tan^2 60^\circ - \tan^2 30^\circ$, then $x =$
 (a) 1 (b) -1 (c) 2 (d) 0
19. If A and B are complementary angles, then
 (a) $\sin A = \sin B$ (b) $\cos A = \cos B$ (c) $\tan A = \tan B$ (d) $\sec A = \operatorname{cosec} B$
20. If $x \sin (90^\circ - \theta) \cot (90^\circ - \theta) = \cos (90^\circ - \theta)$, then $x =$
 (a) 0 (b) 1 (c) -1 (d) 2
21. If $x \tan 45^\circ \cos 60^\circ = \sin 60^\circ \cot 60^\circ$, then x is equal to
 (a) 1 (b) $\sqrt{3}$ (c) $\frac{1}{2}$ (d) $\frac{1}{\sqrt{2}}$
22. If angles A, B, C of a $\triangle ABC$ form an increasing AP, then $\sin B =$
 (a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$ (c) 1 (d) $\frac{1}{\sqrt{2}}$
23. If θ is an acute angle such that $\sec^2 \theta = 3$, then the value of $\frac{\tan^2 \theta - \operatorname{cosec}^2 \theta}{\tan^2 \theta + \operatorname{cosec}^2 \theta}$ is
 (a) $\frac{4}{7}$ (b) $\frac{3}{7}$ (c) $\frac{2}{7}$ (d) $\frac{1}{7}$
24. The value of $\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 89^\circ$ is
 (a) 1 (b) -1 (c) 0 (d) none of these

25. The value of $\cos 1^\circ \cos 2^\circ \cos 3^\circ \dots \cos 180^\circ$ is
 (a) 1 (b) 0 (c) -1 (d) none of these
26. The value of $\tan 10^\circ \tan 15^\circ \tan 75^\circ \tan 80^\circ$ is
 (a) -1 (b) 0 (c) 1 (d) none of these
27. The value of $\frac{\cos(90^\circ - \theta) \sec(90^\circ - \theta) \tan \theta}{\operatorname{cosec}(90^\circ - \theta) \sin(90^\circ - \theta) \cot(90^\circ - \theta)} + \frac{\tan(90^\circ - \theta)}{\cot \theta}$ is
 (a) 1 (b) -1 (c) 2 (d) -2
28. If θ and $2\theta - 45^\circ$ are acute angles such that $\sin \theta = \cos(2\theta - 45^\circ)$, then $\tan \theta$ is equal to
 (a) 1 (b) -1 (c) $\sqrt{3}$ (d) $\frac{1}{\sqrt{3}}$
29. If 5θ and 4θ are acute angles satisfying $\sin 5\theta = \cos 4\theta$, then $2\sin 3\theta - \sqrt{3} \tan 3\theta$ is equal to
 (a) 1 (b) 0 (c) -1 (d) $1 + \sqrt{3}$
30. If $A + B = 90^\circ$, then $\frac{\tan A \tan B + \tan A \cot B}{\sin A \sec B} - \frac{\sin^2 B}{\cos^2 A}$ is equal to
 (a) $\cot^2 A$ (b) $\cot^2 B$ (c) $-\tan^2 A$ (d) $-\cot^2 A$
31. $\frac{2 \tan 30^\circ}{1 + \tan^2 30^\circ}$ is equal to
 (a) $\sin 60^\circ$ (b) $\cos 60^\circ$ (c) $\tan 60^\circ$ (d) $\sin 30^\circ$ [NCERT]
32. $\frac{1 - \tan^2 45^\circ}{1 + \tan^2 45^\circ}$ is equal to
 (a) $\tan 90^\circ$ (b) 1 (c) $\sin 45^\circ$ (d) $\sin 0^\circ$ [NCERT]
33. $\sin 2A = 2 \sin A$ is true when $A =$
 (a) 0° (b) 30° (c) 45° (d) 60° [NCERT]

***** END *****