

TRIGONOMETRY

- If $\sin \theta = 5/13$ then $\cos(90^\circ - \theta) =$ _____
- $\cos^2 40^\circ + \cos^2 50^\circ =$ _____ (June 09)
- $270^\circ =$ _____ radians. (June 2009)
- $\sec \pi/3 =$ _____ (June 2009)
- $\sqrt{\sin^2 \theta + \cos^2 \theta + \tan^2 \theta} =$ _____ (June 09)
- $\tan(90^\circ + \theta) =$ _____ (March 2008)
- If $\tan \theta = 3/4$ then $\sin \theta =$ _____
($0 < 90^\circ$) (March 2008)
- $\cos \pi/3 =$ _____ (March 2008)
- $\cos 360^\circ =$ _____ (March 2007)
- If $\sin \theta = \cos 2\theta$ then $\cot 3\theta =$ _____ (March 2007)
- If $x = a \operatorname{cosec} \theta$, $y = a \cot \theta$ then $x^2 - y^2 =$ _____
- From a ship most head 150 feet high, the angle of depression of a boat is observed as 45° . Its distance from ship is _____
- If $\sec A + \tan A = p$ then $\sin A =$ _____
- Maximum and minimum values of $\sin \theta$ is _____
- Radians is the unit of measure in _____ system
- $(\sec \theta + \tan \theta)(1 - \sin \theta) \cdot \sec \theta =$ _____
- If $\sec A + \tan A = p$ then $\sec A - \tan A =$ _____
- Eliminate θ from $x = \cos \theta + \sin \theta$, $y = \cos \theta \cdot \sin \theta$ then the equation is _____
- $\frac{\sin^4 A - \cos^4 A}{\sin^2 A - \cos^2 A} =$ _____
- $\sin \theta \cdot \operatorname{cosec} \theta + \cos \theta \cdot \sec \theta + \tan \theta \cdot \cot \theta =$ _____
- $\frac{5\pi^c}{2} =$ _____ grades.
- $135^\circ =$ _____ grades.
- $\frac{3\pi^c}{5} =$ _____ degrees.
- A wheel makes 360° revolution in one minute through _____ radians does it turn in a one second.
- The angles of a triangle are in A.P and the greatest angle is three times the least. The angles in circular measure are _____
- The value of $\cos 0^\circ + \sin 90^\circ + \sqrt{2} \sin 45^\circ$ is _____
- $\sin \theta$ in terms of $\sec \theta =$ _____
- $\sin 420^\circ =$ _____
- If $\sqrt{3} \tan \theta = 1$ then $\theta =$ _____
- $\frac{\sqrt{\operatorname{cosec}^2 \theta - 1}}{\operatorname{cosec} \theta} =$ _____
- 1 radian = _____ degrees.
- $\cos(-60^\circ) =$ _____
- $\tan \theta + \cot \theta = 2$ then $\tan^4 \theta + \cot^4 \theta =$ _____
- If $\tan(15^\circ + B) = \frac{1}{\sqrt{3}}$ then $B =$ _____
- If $\tan \theta = a/b$ then $\sin \theta =$ _____
- $\sec \theta (1 - \sin \theta) (\sec \theta + \tan \theta) =$ _____
- $\cos 1^\circ \cdot \cos 2^\circ \cdot \cos 3^\circ \dots \dots \dots \cos 179^\circ =$ _____
- If $\sin x + \sin^2 x = 1$ then $\cos^2 x + \cos^4 x =$ _____
- If $\sin \theta = \cos \theta$ then $\theta =$ _____
- $\sin^2 9^\circ + \sin^2 81^\circ =$ _____
- $\frac{\sin^2 81^\circ + \sin^2 9^\circ}{\tan^2 45^\circ} =$ _____
- $\sin^2 30^\circ, \sin^2 45^\circ, \sin^2 60^\circ$ are in _____ progressions.
- If $\tan(A+B) = \sqrt{3}$, $\tan A = 1$ then $\angle B =$ _____
- $\frac{\sin 18^\circ}{\cos 72^\circ} =$ _____
- A minute hand of a clock is 3cm long, the distance moved in 20 minutes is _____
- The value of $(\sin \theta + \cos \theta)^2 + (\sin \theta - \cos \theta)^2 =$ _____
- The values of $\tan 30^\circ, \tan 45^\circ, \tan 60^\circ$ are in _____ progressions.
- $\sec(270^\circ - \theta) =$ _____
- A straight angle contains _____ degrees.
- The side about which a rotation is made is called _____
- Find the length of side of a regular hexagon inscribed in a circle of a radius 2mt is _____

KEY

1. $5/13$
2. 1
3. $\frac{3\pi^c}{2}$
4. 2
5. $\text{Sec}\theta$
6. $-\text{Cot}\theta$
7. $3/5$
8. $1/2$
9. 1
10. 0
11. a^2
12. 150mt
13. $\frac{p^2-1}{p^2+1}$
14. $[+1,-1]$
15. Circular
16. 1
17. $1/p$
18. $x^2-2y = 1$
19. 1
20. 3
21. 500g
22. 150g
23. 108°
24. 12π
25. $\frac{\pi^c}{6}$, $\frac{\pi^c}{3}$ and $\frac{\pi^c}{2}$
26. 3
27. $\frac{\sqrt{\text{Sec}^2\theta-1}}{\text{Sec}\theta}$
28. $\sqrt{3}/2$
29. 30°
30. $\text{Cos } \theta$
31. $57^\circ.16'$
32. $1/2$
33. 2
34. 15°
35. $\frac{a}{\sqrt{a^2+b^2}}$
36. 1
37. 0
38. 1
39. 45° (or) $\frac{\pi^c}{4}$
40. 1
41. 1
42. A.P
43. $B = 15^\circ$
44. 1
45. $44/7$ cm
46. 2
47. Geometric Progression
48. $-\text{Cosec}\theta$
49. 180°
50. initial side 51. 2mt

Important Questions

5 Marks

1. There are two temples, one on each bank of a river , just opposite to each other. one of the temples A is 40 mts high. AB observed from the top of this temple A , the angle of depression of the top and foot of the other temple B are $12^\circ30'$ and $21^\circ48'$ respectively. Find the width of the river and the height of the temple B?
2. From the ground and first floor of a building , the angle of elevation of the top of the spire of a church was found to be 60° and 45° respectively. The first floor is 5 mts high. Find the height of the spire?
3. A glider is flying at an altitude of 5000 mts. The angle of depression of the cotrol tower of the air port from the glider is 18° . What is the horizontal distance between the glider and control tower?

4. An aeroplane at an altitude of 2500 mts observe the angles of depression of opposite points on the two banks of river to be $41^{\circ}20'$ and $52^{\circ}10'$. Find in meters, the width of the river?

4 Marks

1. If $\operatorname{cosec}\theta + \cot\theta = P$ then prove that $(P^2+1)\cos\theta = p^2 - 1$ ($p \neq 0$)?
2. Show that $3(\sin x - \cos x)^4 + 6(\sin x + \cos x)^2 + 4(\sin^6 x + \cos^6 x) = 13$?
3. Eliminate θ from the equations $x \cos \theta + y \sin \theta = a$ and $x \sin \theta - y \cos \theta = b$?
4. Prove that $\frac{\tan\theta + \sec\theta - 1}{\tan\theta - \sec\theta + 1} = \frac{1 + \sin\theta}{\cos\theta}$?
5. Find the value of $32 \cot^2 \frac{\pi}{4} - 8 \sec^2 \frac{\pi}{3} + 8 \cot^3 \frac{\pi}{6}$?

2 Marks

1. Show that $\sqrt{\frac{1+\cos\theta}{1-\cos\theta}} = \operatorname{cosec}\theta + \cot\theta$?
2. If $\cos\theta = \frac{\sqrt{3}}{2}$ and θ is acute find $4\sin^2 + \tan^2\theta$?
3. Show that $\frac{1 - \tan^2\theta}{\cot^2\theta - 1} = \tan^2\theta$?
4. If $\tan(A+B) = \sqrt{3}$ and $\tan A = 1$ What is the measure of B?
5. If $\tan\theta + \cot\theta = 2$ find the value of $\tan^2\theta + \cot^2\theta$?
6. Prove that $\sec^2\theta + \operatorname{cosec}^2\theta = \sec^2\theta \cdot \operatorname{cosec}^2\theta$.
7. Prove that $1 - (\sin^6\theta + \cos^6\theta) = 3\sin^2\theta \cdot \cos^2\theta$?
8. Show that $\sin^2 A + \cos^2 A = 1$?

1 Mark

1. Find the value of $\cos 0^\circ + \sin 90^\circ + \sqrt{2} \sin 45^\circ$?
2. If $\cos\theta = \frac{\sqrt{3}}{2}$ then find values of \sin ?
3. Eliminate ' θ ' from $x = a \sin \theta$, $y = a \cos \theta$?
4. Write $\tan \theta$ value in terms of $\cos \theta$?
5. Define Radian?
6. Show that $\frac{1 - \tan^2 30}{1 + \tan^2 30} = \cos 60^\circ$?
7. Express $\frac{5\pi}{6}$ in sexagesimal measure?
8. Convert 200° in to circular measure ?
9. Find the value of $\cot 240^\circ$?
10. If $\sec \theta + \tan \theta = p$ then Find $\sec \theta - \tan \theta$ Value?