



Discover the Power of Jsunil Tutorial

Trigonometry

Section A 1 mark each

Q1. The value of $\tan A$ is always less than 1: (1) Yes (2) No

Q2. $\frac{1-\tan^2 45^\circ}{1+\tan^2 45^\circ}$ is equal to:

Q3. Find value of $\frac{\sin 30^\circ}{\cos 60^\circ}$

Q4. If $3 \tan \theta = 2$, evaluate $\frac{3\sin\theta-2\cos\theta}{3\sin\theta+2\cos\theta}$

Section B 2 mark each

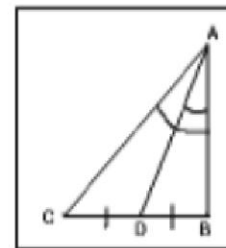
Q5. Prove $\frac{\sin\theta-2\sin^3\theta}{2\cos^3\theta-\cos\theta} = \tan\theta$

Q6. Prove $\cos^4 A - \cos^2 A = \sin^4 A - \sin^2 A$

Q7. Prove $\frac{1}{\sec\theta-\tan\theta} - \frac{1}{\cos\theta} = \frac{1}{\cos\theta} - \frac{1}{\sec\theta+\tan\theta}$

Q8. Prove $(1 + \tan^2 \theta) + 1 + \frac{1}{\tan^2 \theta} = \frac{1}{(\sin^2 \theta - \sin^4 \theta)}$

Q9. $\triangle ABC$ is right angled triangle. $\angle CAB = \phi$, $\angle DAB = \theta$. Show $\frac{\tan\theta}{\tan\phi} = \frac{1}{2}$



Q10. If A, B, C are interior angles of a triangle prove that $\tan \frac{B+C}{2} = \cot \frac{A}{2}$

Section C 3 mark each

Q11. Prove $\frac{\tan\theta}{1-\cot\theta} + \frac{\cot\theta}{1-\tan\theta} = 1 + \sec\theta \cdot \operatorname{cosec}\theta$

Q12. Prove $\frac{1+\tan^2\theta}{1+\cot^2\theta} = \left[\frac{1-\tan\theta}{1-\cot\theta} \right]^2$

Q13. Evaluate: $\sec^2 10^\circ - \cot^2 80^\circ + \frac{\sin 15^\circ \cos 75^\circ + \cos 15^\circ \sin 75^\circ}{\cos 8^\circ \sin(90^\circ - \theta) + \sin 8^\circ \cos(90^\circ - \theta)}$