

Regular Weekly Test

Trigonometry

Class: X
Subject: Mathematics

Time: 1 hr.
Max. Marks: 30

Q.1 Without using trigonometric tables, evaluate: $\tan 10^\circ \cdot \tan 25^\circ \cdot \tan 65^\circ \cdot \tan 80^\circ$. (2)

Q.2 If $5\sin\theta = 4\cos\theta$, find the value of $\frac{5\sin\theta + 2\cos\theta}{15\sin\theta + 4\cos\theta}$ (2)

Q.3 Prove that $\sqrt{\sec^2 A + \operatorname{cosec}^2 A} = \sec A \cdot \operatorname{cosec} A$ (2)

Q.4 If $\cos\theta + \sin\theta = \sqrt{2} \cos(90^\circ - \theta)$, determine $\tan\theta$ (2)

Q.5 Evaluate $\frac{4 \cos^2 30^\circ - 3 \tan 45^\circ}{8 \sin^3 30^\circ + 2 \cot^2 30^\circ} + 2 \sec 45^\circ \cdot \operatorname{cosec} 45^\circ$ (2)

Q.6 Find the area of an isosceles triangle, whose base measures 10cm and the vertical angle measures 120° . (2)

Q.7 Use the formula $\cos 2\theta = 2\cos^2\theta - 1$ to find the value of $\cos 60^\circ$, given that $\cos 30^\circ = \sqrt{3}/2$. (2)

Q.8 Solve for θ :
(i) $2 \cos 3\theta - 1 = 0$ (2)
(ii) $3 \tan\theta + \cot\theta = 5 \operatorname{cosec}\theta$ (4)

Q.9 Two men standing on either side of a tower 60m high observe the angle of elevation of the top of the tower to be 45° and 60° respectively. Find the distance between the two men. (4)

Q.10 The angle of elevation of a cloud from a point 60m above a lake is 30° and the angle of depression of the reflection of cloud in the lake is 60° . Find the height of the cloud. (6)

The only time you don't fail is the last time you try anything -- and it works.