

Example: 1

If $\frac{\tan\theta + \cot\theta}{\tan\theta - \cot\theta} = 2, (0 \leq \theta \leq 90)$ then the value of $\sin \theta$.

यदि $\frac{\tan\theta + \cot\theta}{\tan\theta - \cot\theta} = 2, (0 \leq \theta \leq 90)$, तो $\sin \theta$ का मान ज्ञात कीजिए ।

(1) $\frac{\sqrt{3}}{2}$

(2) 0

(3) $\frac{1}{2}$

(4) 1

Example: 2

If $\tan\theta = \frac{a}{b}$, then find the value of $\frac{a\sin\theta - b\cos\theta}{a\sin\theta + b\cos\theta}$.

यदि $\tan\theta = \frac{a}{b}$, हैं, तो $\frac{a\sin\theta - b\cos\theta}{a\sin\theta + b\cos\theta}$ का मान हैं ।

(1) $\frac{a^2 - b^2}{a^2 + b^2}$ (2) $\frac{a^2 + b^2}{a^2 - b^2}$

(3) $\frac{ab}{a^2 + b^2}$ (4) 1

Example: 3

If $x = a(\sin \theta + \cos \theta)$, $y = b(\sin \theta - \cos \theta)$ then value of $\frac{x^2}{a^2} + \frac{y^2}{b^2}$ is:

यदि $x = a(\sin \theta + \cos \theta)$, $y = b(\sin \theta - \cos \theta)$ तो $\frac{x^2}{a^2} + \frac{y^2}{b^2}$ का मान है:

(1) 2

(2) $\frac{1}{2}$

(3) $\frac{\sqrt{3}}{2}$

(4) 1

Example: 4

If $\tan (A + B) = \sqrt{3}$ and $\cos (A - B) = \frac{\sqrt{3}}{2}$, then value of $\sin 2A + \tan 3B$ is-

यदि $\tan (A + B) = \sqrt{3}$ और $\cos (A - B) = \frac{\sqrt{3}}{2}$, तो $\sin 2A + \tan 3B$ है -

(1) 2

(2) $\frac{1}{2}$

(3) $\frac{\sqrt{3}}{2}$

(4) 1

Example: 5

If $\tan 2\theta \cdot \tan 4\theta = 1$, then $\cot 3\theta$ is -

यदि $\tan 2\theta \cdot \tan 4\theta = 1$, तो $\cot 3\theta$ है -

(1) 2

(2) $\sqrt{3}$

(3) $\frac{1}{\sqrt{3}}$

(4) 1

Example: 6

$$\sin^2 60^\circ + \cos^2 30^\circ + \tan^2 45^\circ + \operatorname{cosec}^2 30^\circ - \sec^2 60^\circ + \cot^2 30^\circ = ?$$

(1) 3.5

(2) 4.5

(3) 2.5

(4) 5.5

Example: 7

$$\sqrt{\frac{1+\sin\theta}{1-\sin\theta}} = ?$$

- (1) $\sin\theta + \cos\theta$
- (2) $2\sin\theta\cos\theta$
- (3) $\sec\theta + \tan\theta$
- (4) $\operatorname{cosec}\theta + \cot\theta$

Example: 8

$$\tan 7^\circ \tan 23^\circ \tan 60^\circ \tan 67^\circ \tan 83^\circ = ?$$

(1) 2

(2) $\sqrt{3}$

(3) $\frac{1}{\sqrt{3}}$

(4) 1

Example: 9

$$\sin^2 1^\circ + \sin^2 2^\circ + \sin^2 3^\circ + \sin^2 4^\circ + \dots + \sin^2 88^\circ + \sin^2 89^\circ = ?$$

- (1) 89
- (2) 44
- (3) 44.5
- (4) 45

Example: 10

$$\sin^2 1^\circ + \sin^2 2^\circ + \sin^2 3^\circ + \sin^2 4^\circ + \dots + \sin^2 89^\circ + \sin^2 90^\circ = ?$$

(1) 44

(2) 44.5

(3) 45

(4) 45.5

Example: 11

$$\sin^2 5^\circ + \sin^2 10^\circ + \sin^2 15^\circ + \sin^2 20^\circ + \dots + \sin^2 85^\circ + \sin^2 90^\circ = ?$$

(1) 8

(2) 8.5

(3) 9.5

(4) 9

Example: 12

If $7\sin^2\theta + 3\cos^2\theta = 4$, then value of θ is –
यदि $7\sin^2\theta + 3\cos^2\theta = 4$, तो θ मान है –

- (1) 30°
- (2) 45°
- (3) 60°
- (4) 90°

Example: 13

If $\sec \theta + \tan \theta = 2$, then value of $\sec \theta$ is -
यदि $\sec \theta + \tan \theta = 2$, तो $\sec \theta$ का मान है -

(1) $5/4$ (2) $4/5$

(3) $3/5$ (4) $5/3$