इस रक्षक बैंच | TRIGONOMETRY | MATHS

Trigonometry Identities

$\sin^2\theta + \cos^2\theta = 1$

$1 + \cot^2\theta = \operatorname{cosec}^2\theta$

$1 + \tan^2\theta = \sec^2\theta$

$\frac{\sin^2\theta}{\sin^2\theta} + \frac{\cos^2\theta}{\sin^2\theta} = \frac{1}{\sin^2\theta}$

$(1 + \cot^2\theta = \operatorname{cosec}^2\theta)$

$(\cot^2\theta = \operatorname{cosec}^2 - 1)$

$\frac{\sin^2\theta}{\cos^2\theta} + \frac{\cos^2\theta}{\cos^2\theta} = \frac{1}{\cos^2\theta}$

$\tan^2\theta + 1 \Rightarrow \sec^2\theta$

12. Find the value of the following ?

$\cos^2(270-\phi) - \sin^2(180-\phi) + \sin^2\left(\frac{\pi}{2}\right)\sin^2(270-\phi)$.

निम्न का मान ज्ञात कीजिए।

$\pi = 180°$

(a) $\cos^2\phi$

(b) $\sin^2\left(\frac{\pi}{2}\right)$

(c) $\sin^2(\phi) - 1$

(d) $\sin^2(\phi)$

Solve :-

$\cos^2(270-\theta) - \sin^2(180-\theta) + \sin^2(90°).\sin^2(270-\theta)$

$\Rightarrow -\sin^2\theta - \sin^2\theta + 1(-\cos^2\theta)$

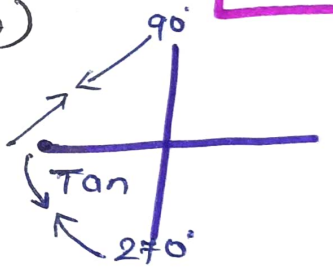
$\Rightarrow -\sin^2\theta - \sin^2\theta - \cos^2\theta$

$\Rightarrow -\sin^2\theta - (\sin^2\theta + \cos^2\theta)$

$\Rightarrow -\sin^2\theta - 1$

$\Rightarrow -\sin^2\phi - 1.$ //

$\frac{\pi}{2} = 90°$



13. What is the value of $[\cos(90°+A) + \sec(270°-A)] + [\sin(270°+A) + \operatorname{cosec}(630°-A)]$ का मान ज्ञात कीजिए।

(a) 3 SecA

(b) tan A SecA

(c) 0

(d) 1.

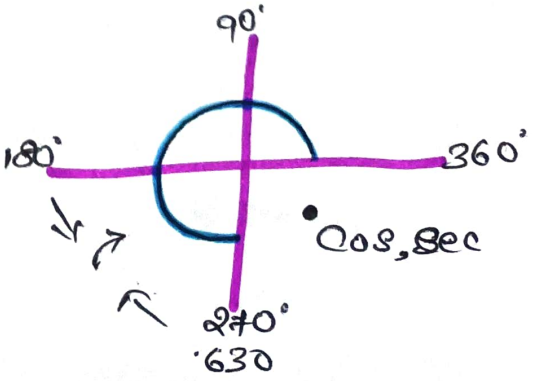
Solve :-

$[\cos(90+A) + \sec(270°-A)] + [\sin(270°-A) + \operatorname{cosec}(630-A)]$.

$-\sin A \quad -\operatorname{cosec} A \quad -\cos A \quad -\sec A$

90 x odd → Ratio change

90 x even → No change



TRIGONOMETRY

13. What is the value of $[\cos(90°+A)+\sec(270°-A)]+[\sin(270°+A)+\operatorname{cosec}(630°-A)]$. का मान ज्ञात कीजिए।

(a) 3 Sec A
(b) tan A Sec A
(c) 0
(d) 1.

Solve:-

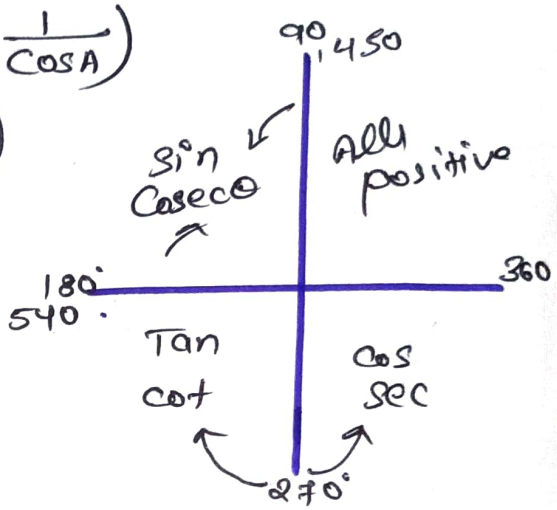
$[\cos(90+A)+\sec(270-A)]+[\sin(270+A)+\operatorname{cosec}(630-A)]$

$\Rightarrow [-\sin A-\operatorname{cosec} A]+[-\cos A-\sec A]$

$\Rightarrow -\sin A-\operatorname{cosec} A-\cos A-\sec A.$

$\Rightarrow -\left(\sin A+\frac{1}{\sin A}\right)-\left(\cos A+\frac{1}{\cos A}\right)$

$\Rightarrow -\frac{(\sin^2 A+1)}{\sin A}-\left(\frac{\cos^2 A+1}{\cos A}\right)$



16. Find the value of $\tan 4384° + \cot 6814° = ?$

$\tan 4384° + \cot 6814°$ का मान ज्ञात कीजिए?

(a) -1
(b) 2
(c) 0
(d) 1.

Solve:-

$\tan(12\times360+64)+\cot(19\times360-26)$

$\tan 64-\cot 26$

$\tan 64-\cot(90-64)$

$\tan 64-\tan 64 \Rightarrow 0$

$360\times12 = 4320$

$360\times20 = 7200$

$19\times360 \Rightarrow 6840$

$6814 - 6814$

$26 \quad 386$