

Foundation Batch



MATHS

Trigonometry

Part -6

LIVE

06-11-2024 07:00PM



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

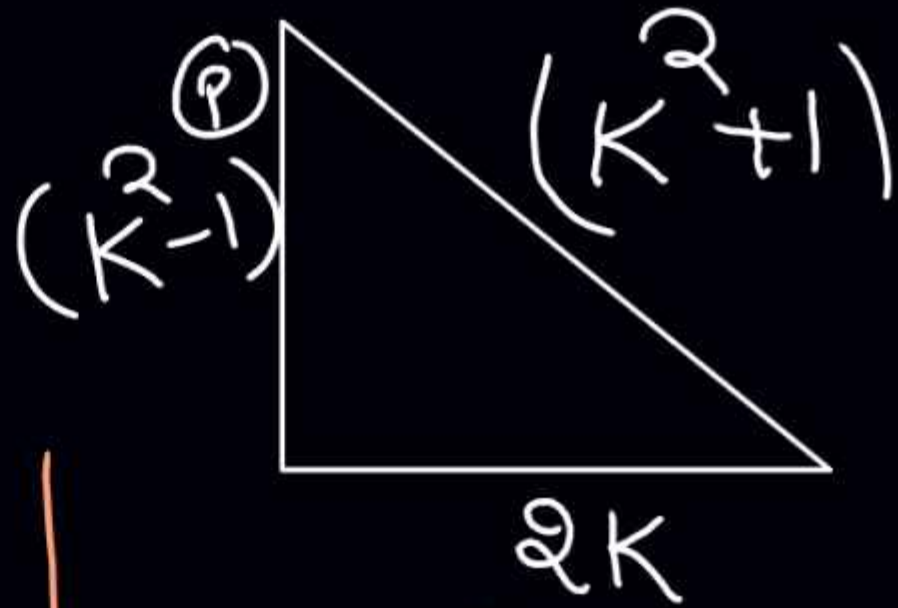
$$\sec \theta + \tan \theta = \frac{1}{\sec \theta - \tan \theta}$$

$$\# \quad \sec \theta + \tan \theta = K$$

$$\sec \theta - \tan \theta = \frac{1}{K}$$

$$+ \quad \hline 2 \sec \theta = K + \frac{1}{K} = \frac{K^2 + 1}{K}$$

$$\boxed{\sec \theta = \frac{K^2 + 1}{2K}}$$



$$P^2 = (K^2 + 1)^2 - (2K)^2$$

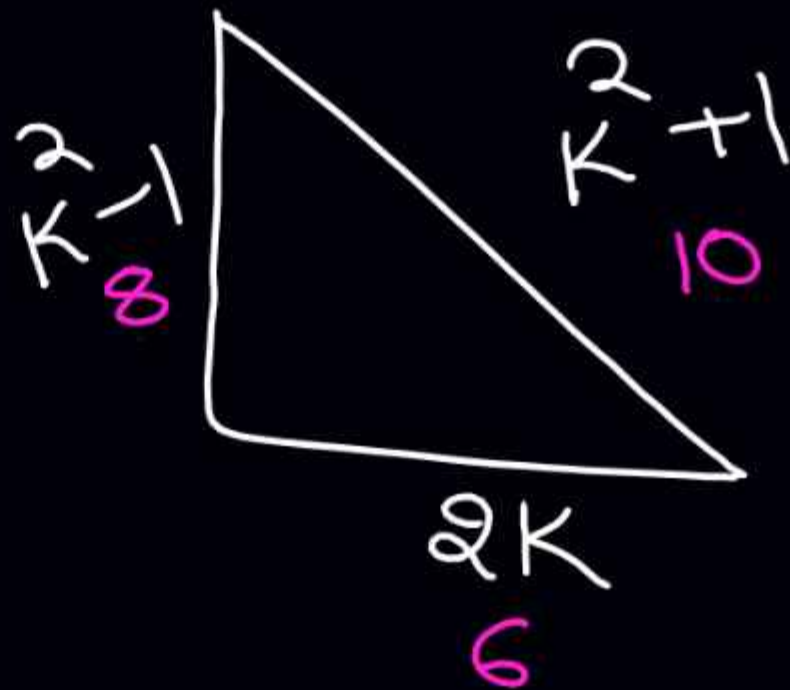
$$P^2 = K^4 + 1 + 2K^2 - 4K^2$$

$$P^2 = K^4 + 1 - 2K^2 \Rightarrow \boxed{P = K^2 - 1}$$

ex

$$\sec \theta + \tan \theta = 3 \text{ --- } \textcircled{k}$$

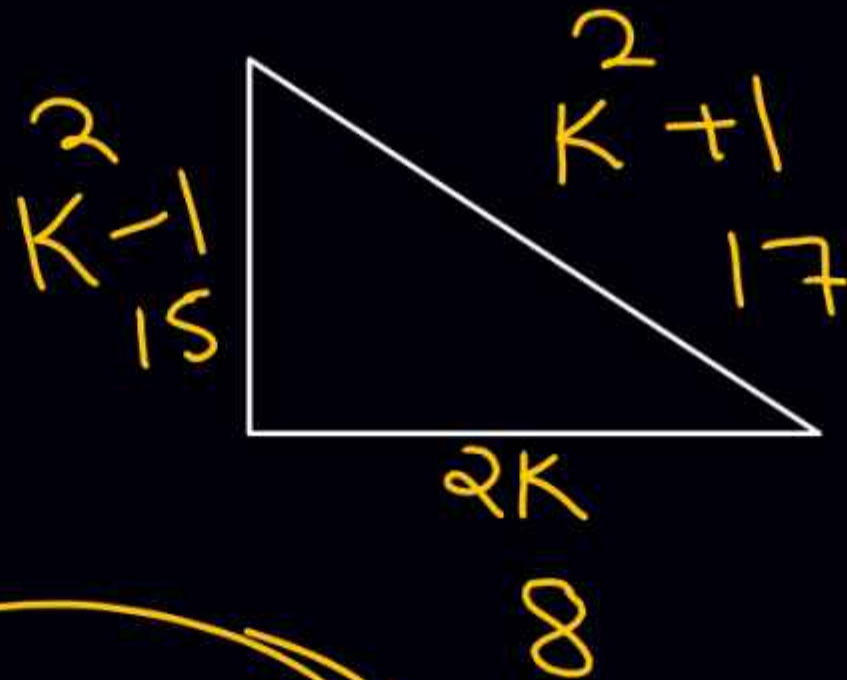
$$\underline{\sin \theta = ?}$$



$$\sin \theta = \frac{8}{10} = \frac{4}{5}$$

$$\operatorname{cosec} \theta + \cot \theta = 4 \rightarrow \textcircled{K}$$

$$\cos \theta = ?$$

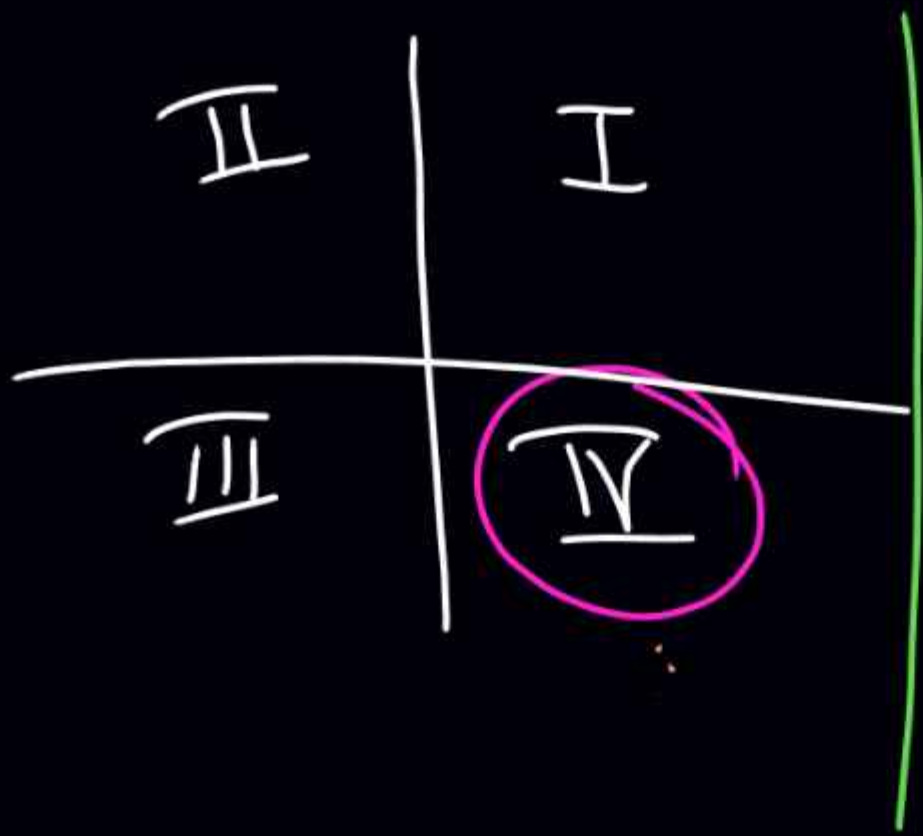


$$\cos \theta = \frac{8}{17}$$

Special Case

$$\text{Sec } \theta - \tan \theta = 3 \quad \text{--- (K)}$$

$$\text{Sec } \theta + \tan \theta = \frac{1}{3}$$

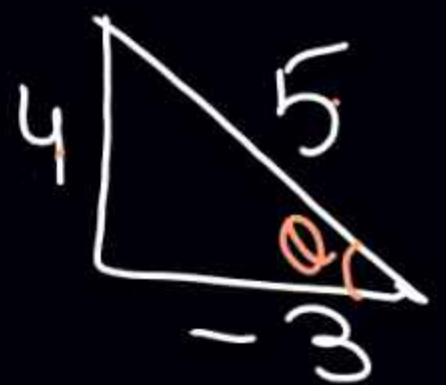


$$2 \tan \theta = \frac{1}{3} - 3$$

$$2 \tan \theta = -\frac{8}{3}$$

$$\tan \theta = -\frac{4}{3}$$

3/4 4/3



$$\sin \theta = -\frac{4}{5}, +\frac{4}{5} \times$$



If $\sec \theta = x + \frac{1}{4x}$ ($0^\circ < \theta < 90^\circ$), then what will be $\sec \theta + \tan \theta$ equal to?

यदि $\sec \theta = x + \frac{1}{4x}$ ($0^\circ < \theta < 90^\circ$) हो, तो $\sec \theta + \tan \theta$ किसके बराबर होगा? $x=1$ Put

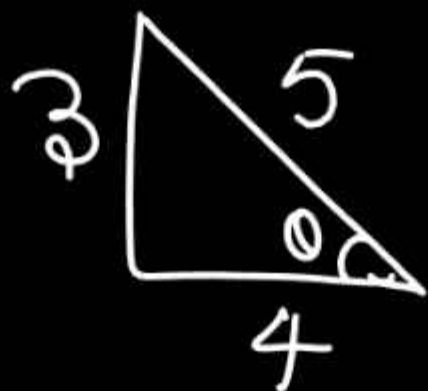
~~(A) $\frac{x}{2} = \frac{1}{2}$~~

~~(B) $2x = 2$~~

~~(C) $x = 1$~~

~~(D) $\frac{1}{2x} = \frac{1}{2}$~~

$$\sec \theta = 1 + \frac{1}{4} = \frac{5}{4}$$



$\sec \theta + \tan \theta$

$$\frac{5}{4} + \frac{3}{4} = \frac{8}{4} \text{ (2)}$$



44. If $\sec \theta + \tan \theta = 2 + \sqrt{5}$, then what will be the value of $\sin \theta + \cos \theta$?

यदि $\sec \theta + \tan \theta = 2 + \sqrt{5}$ हो, तो $\sin \theta + \cos \theta$ का मान क्या होगा?

- (A) $\frac{3}{\sqrt{5}}$
- (B) $\sqrt{5}$
- (C) $\frac{7}{\sqrt{5}}$
- (D) $\frac{1}{\sqrt{5}}$

$$\sec \theta + \tan \theta = \sqrt{5} + 2$$

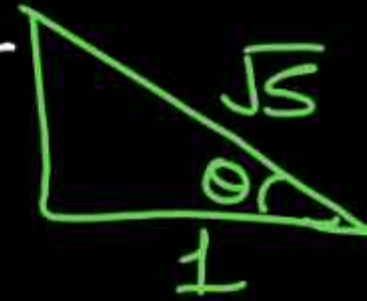
$$\sec \theta - \tan \theta = \frac{1}{\sqrt{5} + 2} \times \frac{\sqrt{5} - 2}{\sqrt{5} - 2}$$

$$\cancel{\sec \theta} = \cancel{\sqrt{5}}$$

$$\sec \theta = \sqrt{5}$$

$$\frac{\sqrt{5} - 2}{5 - 4} = \sqrt{5} - 2$$

$$\sqrt{5} - 1 = 2$$



$$\frac{2}{\sqrt{5}} + \frac{1}{\sqrt{5}}$$

$$\frac{3}{\sqrt{5}}$$



45. The numerical value of $\frac{1}{1+\cot^2 \theta} + \frac{3}{1+\tan^2 \theta} + 2\sin^2 \theta$ is

$\frac{1}{1+\cot^2 \theta} + \frac{3}{1+\tan^2 \theta} + 2\sin^2 \theta$ का संख्यात्मक मान होगा

(A) 2

(B) 5 $\frac{1}{\operatorname{cosec}^2 \theta} + \frac{3}{\sec^2 \theta} + 2\sin^2 \theta$

(C) 6

(D) 3

$$\sin^2 \theta + 3\cos^2 \theta + 2\sin^2 \theta$$

$$3\sin^2 \theta + 3\cos^2 \theta$$

$$3(\sin^2 \theta + \cos^2 \theta)$$

$$3 \times 1 = 3$$



45. The numerical value of $\frac{1}{1+\cot^2 \theta} + \frac{3}{1+\tan^2 \theta} + 2\sin^2 \theta$ is

$\frac{1}{1+\cot^2 \theta} + \frac{3}{1+\tan^2 \theta} + 2\sin^2 \theta$ का संख्यात्मक मान होगा

(A) 2

(B) 5

(C) 6

~~(D) 3~~

Value putting

$$\theta = 45^\circ$$

$$\frac{1}{1+1} + \frac{3}{1+1} + 2 \times \left(\frac{1}{\sqrt{2}}\right)^2$$

$$\frac{1}{2} + \frac{3}{2} + 2 \times \frac{1}{2}$$

$$2 \times \frac{1}{2} + 1 = 3$$



46. The value of $\frac{4}{1+\tan^2 \alpha} + \frac{1}{1+\cot^2 \alpha} + 3\sin^2 \alpha$ is

$\sec^2 \theta$
 $\frac{4}{1+\tan^2 \alpha} + \frac{1}{1+\cot^2 \alpha} + 3\sin^2 \alpha$ का मान है $\cos^2 \theta$

~~(A) 4~~

~~(B) -1~~

(C) 2

(D) 3

$$\theta = 45^\circ$$

$$\frac{4}{1+1} + \frac{1}{1+1} + 3 \times \left(\frac{1}{\sqrt{2}}\right)^2$$

$$\frac{4}{2} + \frac{1}{2} + 3 \times \frac{1}{2}$$

$$\frac{5}{2} + \frac{3}{2} = \frac{8}{2} = 4$$

$$4\cos^2 \theta + \sin^2 \theta + 3\sin^2 \theta$$

$$4(\cos^2 \theta + \sin^2 \theta)$$

$$4 \times 1 = 4$$



47. If $4x = \sec \theta$ and If $\frac{4}{x} = \tan \theta$, then what will be $8\left(x^2 - \frac{1}{x^2}\right)$?

यदि $4x = \sec \theta$ तथा $\frac{4}{x} = \tan \theta$ हो, तो $8\left(x^2 - \frac{1}{x^2}\right)$ क्या होगा?

(A) $\frac{1}{16}$

(B) $\frac{1}{8}$

☒ (C) $\frac{1}{2}$

(D) $\frac{1}{4}$

$$x = \frac{\sec \theta}{4}, \quad \frac{1}{x} = \frac{\tan \theta}{4}$$

$$x^2 - \frac{1}{x^2} = \left(\frac{\sec^2 \theta}{16} - \frac{\tan^2 \theta}{16} \right)$$

$$\frac{1}{16} (\sec^2 \theta - \tan^2 \theta) \Rightarrow \frac{1}{16} \times 1 = \frac{1}{16}$$

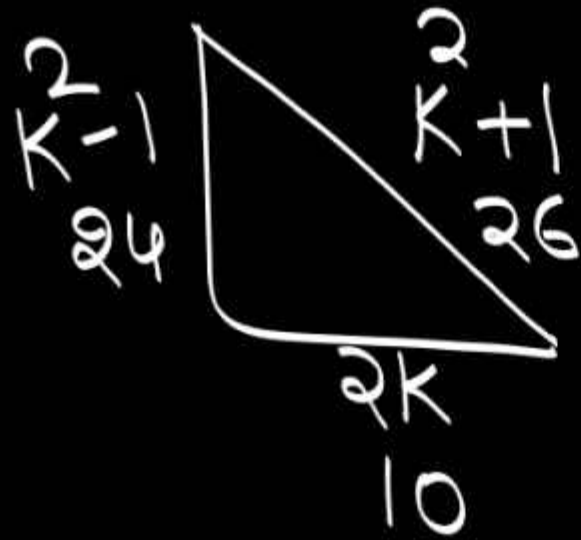
$$8 \times \frac{1}{16} = \frac{1}{2}$$



48. If $\sec \theta + \tan \theta = 5$, then what will be the value of $\frac{\tan \theta + 1}{\tan \theta - 1}$?

यदि $\sec \theta + \tan \theta = 5$, तो $\frac{\tan \theta + 1}{\tan \theta - 1}$ का मान क्या होगा?

- (A) $\frac{11}{7}$
- (B) $\frac{13}{7}$
- (C) $\frac{15}{7}$
- (D) $\frac{17}{7}$



$$\frac{K^2-1}{2K} + 1 = 5$$

$\Rightarrow$

$$\frac{K^2-1+2K}{2K} = 5$$

$$\frac{K^2+2K-1}{2K} = 5$$

$$\frac{17}{7}$$



49. What is the numerical value of $1 + \frac{1}{\cot^2 63^\circ} - \sec^2 27^\circ + \frac{1}{\sin^2 63^\circ} - \operatorname{cosec}^2 27^\circ$.

$1 + \frac{1}{\cot^2 63^\circ} - \sec^2 27^\circ + \frac{1}{\sin^2 63^\circ} - \operatorname{cosec}^2 27^\circ$ का संख्यात्मक मान बताइए :

(A) 1

(B) 2

(C) -1

(D) 0

$$\begin{aligned} & \underline{1 + \tan^2 63^\circ} - \sec^2 27^\circ + \operatorname{cosec}^2 63^\circ - \operatorname{cosec}^2 27^\circ \\ & \quad \downarrow \quad \quad \quad \downarrow \\ & \quad \sec^2(90-63) \quad \quad \quad \operatorname{cosec}^2(90-63) \\ & \cancel{\sec^2 63^\circ} - \cancel{\operatorname{cosec}^2 63^\circ} + \cancel{\operatorname{cosec}^2 63^\circ} - \cancel{\sec^2 63^\circ} \\ & \quad \quad \quad = 0 \end{aligned}$$



50. If θ be an acute angle and $7\sin^2 \theta + 3\cos^2 \theta = 4$, then the value of $\tan \theta$ is

यदि θ एक न्यूनकोण हो और $7\sin^2 \theta + 3\cos^2 \theta = 4$ हो, तो $\tan \theta$ का मान है?

(a) $\sqrt{3}$

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

(c) 1

(d) 0

$\tan 30^\circ$
 $= \frac{1}{\sqrt{3}}$

$$7\sin^2 \theta + 3(1 - \sin^2 \theta) = 4$$

$$7\sin^2 \theta + 3 - 3\sin^2 \theta = 4$$

$$4\sin^2 \theta = 1$$

$$\sin^2 \theta = \frac{1}{4}$$

$$\sin \theta = \sqrt{\frac{1}{4}} = +\frac{1}{2} \Rightarrow \theta = 30^\circ$$



51. If $\sec^2 \theta + \tan^2 \theta = \frac{7}{12}$, then $\sec^4 \theta - \tan^4 \theta =$

यदि $\sec^2 \theta + \tan^2 \theta = \frac{7}{12}$, तो $\sec^4 \theta - \tan^4 \theta =$

~~(a) $\frac{7}{12}$~~

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

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

(d) 1

$$\begin{aligned} & \downarrow \\ & (\sec^2 \theta + \tan^2 \theta) (\sec^2 \theta - \tan^2 \theta) \\ & \quad \downarrow \quad \quad \quad \downarrow \\ & \quad \frac{7}{12} \quad \times \quad 1 \\ & \quad \quad \quad = \frac{7}{12} \end{aligned}$$



52. If $\sin \theta + \cos \theta = \sqrt{2} \cos \theta$, then $\sin \theta - \cos \theta = ?$

यदि $(\sin \theta + \cos \theta = \sqrt{2} \cos \theta)$, तो $(\sin \theta - \cos \theta) = ?$

~~(A) $\pm \sqrt{2} \sin \theta$~~

~~(B) $\pm \sqrt{2} \tan \theta$~~

~~(C) $\pm \sqrt{2} \operatorname{cosec} \theta$~~

~~(D) $\pm \sqrt{2} \sec \theta$~~

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

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

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

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

$$1 - (2 \cos^2 \theta - 1)$$

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

$$2(1 - \cos^2 \theta)$$

$$2 \sin^2 \theta$$

$$\sin \theta - \cos \theta = \sqrt{2 \sin^2 \theta}$$

$$\pm \sqrt{2} \sin \theta$$



53. $\sqrt{\frac{1}{\sin^4(90+A)} + \frac{1}{\cos^2(90+A)-1}} = ?$

(A) $\sec A \operatorname{cosec} A$

(B) $\operatorname{cosec} A \cot A$

(C) $\tan A \sec A$

(D) $\operatorname{cosec} A \cot A$

$$= \sqrt{\frac{1}{\cos^4 A} + \frac{1}{\sin^2 A - 1}}$$

$$= \sqrt{\frac{1}{\cos^4 A} + \frac{1}{-\cos^2 A}}$$

$$= \sqrt{\frac{1}{\cos^2 A} \left[\frac{1}{\cos^2 A} - 1 \right]}$$

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

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

$$\frac{1}{\cos A} \sqrt{\frac{\sin^2 A}{\cos^2 A}}$$

$$\frac{1}{\cos A} \sqrt{\tan^2 A}$$

$$\sec A \times \tan A$$



55. If $\sin^4 \theta + 8\cos^2 \theta = 4$ then find the value of $\sin^2 \theta - 2\sin \theta$.

यदि $\sin^4 \theta + 8\cos^2 \theta = 4$ तो $\sin^2 \theta - 2\sin \theta$ का मान ज्ञात कीजिए।

(a) 2

(b) -2

(c) 1

(d) -1

$$\sin^4 \theta + 8(1 - \sin^2 \theta) = 4$$

$$\sin^4 \theta + 8 - 8\sin^2 \theta = 4$$

$$\sin^4 \theta - 8\sin^2 \theta + 4 = 0$$

$\sin^2 \theta = x$

$$x^2 - 8x + 4 = 0$$
$$\left\{ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \right\}$$



56. $a^2 \sin^2 x + b^2 \cos^2 x = c^2$

$2 \sin^2 x - \cos^2 x = ?$

(a) $\frac{3c^2 - 2b^2 - a^2}{a^2 - b^2}$

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

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

(d) $\frac{3c^2 - b^2 + a^2}{a^2 - b^2}$

$$a^2 \sin^2 x + b^2 (1 - \sin^2 x) = c^2$$

$$a^2 \sin^2 x + b^2 - b^2 \sin^2 x = c^2$$

$$\sin^2 x (a^2 - b^2) = c^2 - b^2$$

$$\sin^2 x = \frac{c^2 - b^2}{a^2 - b^2}$$

$$\cos^2 x = 1 - \sin^2 x \Rightarrow 1 - \frac{c^2 - b^2}{a^2 - b^2}$$

$$\frac{a^2 - \cancel{b^2} - c^2 + \cancel{b^2}}{a^2 - b^2} = \frac{a^2 - c^2}{a^2 - b^2}$$

$$\begin{aligned} & 2 \left(\frac{c^2 - b^2}{a^2 - b^2} \right) - \frac{a^2 - c^2}{a^2 - b^2} \\ & \frac{2c^2 - 2b^2 - a^2 + c^2}{a^2 - b^2} \\ & \frac{3c^2 - 2b^2 - a^2}{a^2 - b^2} \end{aligned}$$



57. What is $(\sin^2 x - \cos^2 x)(1 - \sin^2 x \cos^2 x)$ equal to?

$(\sin^2 x - \cos^2 x)(1 - \sin^2 x \cos^2 x)$ किसके बराबर है?

(a) $\sin^4 x - \cos^4 x$

(b) $\sin^6 x - \cos^6 x$

(c) $\cos^8 x - \sin^8 x$

(d) $\sin^8 x - \cos^8 x$



58. Consider the following equations:

निम्नलिखित समीकरणों पर विचार करें:

I. $\operatorname{cosec}^2 x + \sec^2 x = \operatorname{cosec}^2 x \sec^2 x$

II. $\sec^2 x + \tan^2 x = \sec^2 x \tan^2 x$

III. $\operatorname{cosec}^2 x + \tan^2 x = \cot^2 x + \sec^2 x$

Which of the above statements are correct?

उपर्युक्त में से कौन से कथन सही हैं?

(a) I and II

(b) II and III

(c) I and III

(d) All of these



59. What is the value of $(\sin^6 \theta + \cos^6 \theta) - 3(\sin^4 \theta + \cos^4 \theta) + 1$?

$2(\sin^6 \theta + \cos^6 \theta) - 3(\sin^4 \theta + \cos^4 \theta) + 1$ का मान कितना है ?

(A) 4

(B) 0

(C) 1

(D) 2



60. If $\sin \theta + \sin^2 \theta = 1$, then what is the value of $\cos^{12} \theta + 3\cos^{10} \theta + 3\cos^8 \theta + \cos^6 \theta - 1$?

यदि $\sin \theta + \sin^2 \theta = 1$ हो, तो $\cos^{12} \theta + 3\cos^{10} \theta + 3\cos^8 \theta + \cos^6 \theta - 1$ का मान क्या होगा?

(A) 0

(B) 1

(C) -1

(D) 2



61. If $\sin^2 \alpha = \cos^3 \alpha$, then the value of $(\cot^6 \alpha - \cot^2 \alpha)$ is-

यदि $\sin^2 \alpha = \cos^3 \alpha$, तो $(\cot^6 \alpha - \cot^2 \alpha)$ का मान है-

(A) 1

(B) 0

(C) -1

(D) 2



$$\sin(A + B) = \sin A \cos B + \cos A \sin B$$

$$\sin(A - B) = \sin A \cos B - \cos A \sin B$$

$$\cos(A + B) = \cos A \cos B - \sin A \sin B$$

$$\cos(A - B) = \cos A \cos B + \sin A \sin B$$

$$\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

$$\cot(A + B) = \frac{\cot A \cot B - 1}{\cot B + \cot A}$$

$$\cot(A - B) = \frac{\cot A \cot B + 1}{\cot B - \cot A}$$



62. If $\cos \theta + \sec \theta = 2$, the value of $\cos^6 \theta + \sec^6 \theta$ is:

यदि $\cos \theta + \sec \theta = 2$, तो $\cos^6 \theta + \sec^6 \theta$ का मान है:

(a) -1

(b) 8

(c) 2

(d) 0



63. If $\sin \theta + \operatorname{cosec} \theta = 2$, then what is the value of $\sin^4 \theta + \cos^4 \theta$?

यदि $\sin \theta + \operatorname{cosec} \theta = 2$ है, तो $\sin^4 \theta + \cos^4 \theta$ का मान क्या है?

- (a) 2
- (b) 2^2
- (c) 2^3
- (d) 1



64. If θ is an acute angle and $\tan \theta + \cot \theta = 2$, then find the value of $\tan^3 \theta + \cot^3 \theta + 6\tan^3 \theta \cdot \cot^2 \theta$

यदि θ एक न्यूनकोण है और $\tan \theta + \cot \theta = 2$ है, तो $\tan^3 \theta + \cot^3 \theta + 6\tan^3 \theta \cdot \cot^2 \theta$ का मान ज्ञात कीजिए।

(a) 8

(b) 6

(c) 10

(d) 12

(SSC-CHSL Pre. 03/07/2024)



65. If $\sin \theta + \operatorname{cosec} \theta = 2$, then what will be the value of $\sin^n \theta + \operatorname{cosec}^n \theta$?

यदि $\sin \theta + \operatorname{cosec} \theta = 2$ हो, तो $\sin^n \theta + \operatorname{cosec}^n \theta$ का मान क्या होगा ?

(a) 2^n

(b) $2^{\frac{1}{n}}$

(c) 2

(d) 0

(SSC CGL Tier-I -07.09.2016)



66. If $\cos \theta + \sec \theta = 2$, then $(\cos^{117} \theta + \sec^{117} \theta)$ is equal to:

यदि $\cos \theta + \sec \theta = 2$ है, तो $(\cos^{117} \theta + \sec^{117} \theta)$ बराबर है:

(A) 234

(B) 2

(C) 2^{117}

(D) 117

(SSC CGL Tier-I 19.06.2019)



67. If θ is an acute angle and $\cot \theta + \tan \theta = 2$ then find the value of $\tan^{12} \theta + \cot^{12} \theta + 2\tan^5 \theta \cot^7 \theta$.

यदि θ एक न्यून कोण है और $\cot \theta + \tan \theta = 2$ है तो $\tan^{12} \theta + \cot^{12} \theta + 2\tan^5 \theta \cot^7 \theta$ का मान ज्ञात कीजिए।

(a) 1

(b) 4

(c) 3

(d) 2



68. Find the value of $\sin 15^\circ$.

$\sin 15^\circ$ का मान ज्ञात कीजिए।

A. $\frac{\sqrt{3}-1}{2\sqrt{2}}$

B. $\frac{\sqrt{3}+1}{2\sqrt{2}}$

C. $\frac{\sqrt{3}-1}{4}$

d. $\frac{\sqrt{3}+1}{4}$



79. Find the value of $\tan 75^\circ$

$\tan 75^\circ$ का मान ज्ञात कीजिए

(A) $2 + \sqrt{3}$

(B) $2 - \sqrt{3}$

(C) $1 + \sqrt{3}$

(D) $1 - \sqrt{3}$



70. What is the value of $\sin 75^\circ + \sin 15^\circ$?

$\sin 75^\circ + \sin 15^\circ$ का मान क्या है?

(a) $\sqrt{3}$

(b) $2\sqrt{3}$

(c) $\sqrt{(3/2)}$

(d) $3/\sqrt{2}$



71. $\cos 18^\circ - \sin 18^\circ$

(a) $\sqrt{2}\sin 18^\circ$

(b) $\sqrt{2}\sin 27^\circ$

(c) $\sqrt{2}\cos 18^\circ$

(d) None of these



72. $\tan 54^\circ = ?$

(a) $\frac{\sin 9^\circ + \cos 9^\circ}{\cos 9^\circ - \sin 9^\circ}$

(b) $\frac{\sin 9^\circ - \cos 9^\circ}{\sin 9^\circ + \cos 9^\circ}$

(c) $\frac{\cos 9^\circ + \tan 9^\circ}{\cos 9^\circ - \tan 9^\circ}$

(d) $\frac{\cos 9^\circ - \sin 9^\circ}{\cos 9^\circ + \sin 9^\circ}$



73. Find the value of $\tan 250^\circ$?

$\tan 250^\circ$ का मान ज्ञात कीजिये।

(a) $2\tan 50^\circ + \tan 20^\circ$

(b) $2\tan 20^\circ + \tan 50^\circ$

(c) $2\tan 50^\circ \tan 20^\circ$

(d) None of these



74. If $\tan A = \frac{15}{8}$ and $\tan B = \frac{7}{24}$, then $\tan(A + B)$?

यदि $\tan A = \frac{15}{8}$ तथा $\tan B = \frac{7}{24}$ है, तो $\tan(A + B)$?

(A) $\frac{416}{87}$

(B) $\frac{87}{416}$

(C) $\frac{304}{297}$

(D) $\frac{297}{304}$



75. $\frac{1}{4}[\sqrt{3}\cos 23^\circ - \sin 23^\circ] = ?$

(a) $\cos 43^\circ$

(b) $\cos 70^\circ$

(c) $\cos 53^\circ$

(d) $\frac{1}{2}\cos 53^\circ$



76. $\sin\left(\frac{\pi}{4} - A\right) \sin\left(\frac{\pi}{4} - B\right) - \cos\left(\frac{\pi}{4} - A\right) \cos\left(\frac{\pi}{4} - B\right) = ?$

- (a) $\sin(A + B)$
- (b) $\cos(A + B)$
- (c) $-\sin(A + B)$
- (d) $-\cos(A + B)$



77. Find the value of A for the given equation.

दिए गए समीकरण के लिए A का मान ज्ञात कीजिए।

$$\tan A + \tan 2A + \tan 3A = \tan A \tan 2A \tan 3A$$

(a) $\frac{\pi}{3}, \frac{2\pi}{3}$

(b) $\frac{5\pi}{6}$

(c) केवल $\frac{\pi}{3}$

(d) केवल $\frac{2\pi}{3}$



78. $\cos(90 - A) \cdot \sin[\pi - (A - B)] + \sin(90 - A)\cos[\pi - (B - A)] = ?$

- (a) $-\sin B$
- (b) $-\cos B$
- (c) $\cos A$
- (d) $\tan B$



79 Find the value of $\tan \frac{2\pi}{5} - \tan \frac{\pi}{15} - \sqrt{3} \tan \frac{2\pi}{5} \tan \frac{\pi}{15}$?

$\tan \frac{2\pi}{5} - \tan \frac{\pi}{15} - \sqrt{3} \tan \frac{2\pi}{5} \tan \frac{\pi}{15}$ का मान ज्ञात कीजिये।

(a) 1

(b) 0

(c) $\sqrt{3}$

(d) $\sqrt{2}$



80. Find the value of $\cot(A - B)$, if $\tan A - \tan B = x$ and $\cot B - \cot A = y$?

यदि $\tan A - \tan B = x$ and $\cot B - \cot A = y$ है, तो $\cot(A - B)$ का मान ज्ञात कीजिये।

(a) $\frac{1}{x} + \frac{1}{y}$

(b) $x + y$

(c) $\frac{1}{x} - \frac{1}{y}$

(d) $x - y$



81. Find $(\alpha + \beta)$, if $\tan \alpha = \frac{m}{m+1}$ and $\tan \beta = \frac{1}{2m+1}$?

यदि $\tan \alpha = \frac{m}{m+1}$ और $\tan \beta = \frac{1}{2m+1}$ है, तो $(\alpha + \beta)$ ज्ञात कीजिये।

(a) 0

(b) $\frac{\pi}{2}$

(c) $\frac{\pi}{4}$

(d) $\frac{\pi}{6}$



82. What is the value of $[(\sin 59^\circ \cos 31^\circ + \cos 59^\circ \sin 31^\circ) \div (\cos 20^\circ \cos 25^\circ - \sin 20^\circ \sin 25^\circ)]$?

$[(\sin 59^\circ \cos 31^\circ + \cos 59^\circ \sin 31^\circ) \div (\cos 20^\circ \cos 25^\circ - \sin 20^\circ \sin 25^\circ)]$ का मान क्या है?

(a) $1/\sqrt{2}$

(b) $2/\sqrt{2}$

(c) $\sqrt{3}$

(d) $\sqrt{2}$

SSC CGL Tier-2 (2017)



Foundation Batch

MATHS

