



मिशन SSC 2023



MATHS

त्रिकोणमिति (TRIGONOMETRY)

**SSC CGL/CHSL पर आधारित
पिछली परीक्षा में पूछे गए प्रश्न**

हमारे **TOPIC EXPERT** के साथ

BY MATHS GURU



LIVE

4:00 PM



The value of $\tan^2 \theta + \cot^2 \theta - \sec^2 \theta \operatorname{cosec}^2 \theta$ is:

$\tan^2 \theta + \cot^2 \theta - \sec^2 \theta \operatorname{cosec}^2 \theta$ का मान है -

(A) 2



(B) -2

(C) 0

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

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

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$\tan^2 \theta + \cot^2 \theta - \frac{1}{\cos^2 \theta} \times \frac{1}{\sin^2 \theta} = 1$

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

$\tan^2 \theta + \cot^2 \theta - 1 - \tan^2 \theta - \cot^2 \theta = \tan^2 \theta - \cot^2 \theta$

-2

-1





If $\tan \theta + \sec \theta = 7$, θ being acute, then the value of $5 \sin \theta$ is:

यदि $\tan \theta + \sec \theta = 7$, θ न्यून कोण है, तो $5 \sin \theta$ का मान है:

- (A) ~~25/24~~ (B) ~~24/25~~ (C) ~~1/24~~ (D) 24/5

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

$\sec \theta - \tan \theta = \frac{1}{7}$

$(\sec \theta + \tan \theta) (\sec \theta - \tan \theta) = 1$

$\sec \theta = 7 + \frac{1}{7} = \frac{50}{7}$

$\sec \theta = \frac{50}{7} = \frac{25}{7}$

B



2022)

B (7)



If $\sec^2 A + \tan^2 A = 4/17$ then $\sec^4 A - \tan^4 A$ is equal to:

यदि $\sec^2 A + \tan^2 A = 4/17$ तो $\sec^4 A - \tan^4 A$ बराबर है:

- (A) 13/17
- (B) 4/13
- (C) 4/17
- (D) 5/17

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$$(\sec A + \tan^2 A)(\sec A - \tan^2 A) = \sec^2 A - \tan^2 A = 1$$

$$\left[\frac{4}{17} \times 1 \right] = \frac{4}{17}$$





The value of $\cot 15^\circ \cot 25^\circ \cot 45^\circ \cot 75^\circ \cot 65^\circ$ is: _____

$\cot 15^\circ \cot 25^\circ \cot 45^\circ \cot 75^\circ \cot 65^\circ$ का मान है :

- (A) 1
- (B) $\sqrt{3}$
- (C) 2
- (D) $\sqrt{2}$

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Handwritten solution:

$$\cot 15^\circ \cdot \cot 75^\circ = 1$$

$$\cot 25^\circ \cdot \cot 65^\circ = 1$$

$$\cot 45^\circ = 1$$

Handwritten solution:

$$\cot 15^\circ \cdot \tan 15^\circ = 1$$

$$\cot 15^\circ = \frac{1}{\tan 15^\circ}$$

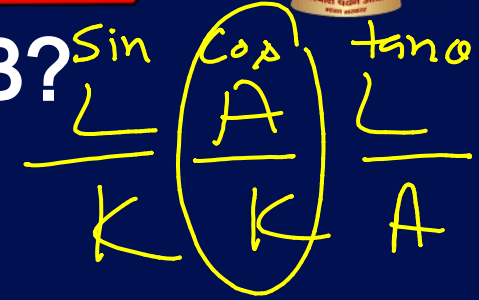




If $\cot B = 9$, then what will be the value of $\sec^2 B$?

यदि $\cot B = 9$ है, तो $\sec^2 B$ का मान क्या होगा?

- (A) $98/81$
- (B) $92/81$
- (C) $42/81$
- (D) $82/81$



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$$\sec^2 \theta = \left(\frac{\sqrt{82}}{9} \right)^2 = \frac{82}{81}$$

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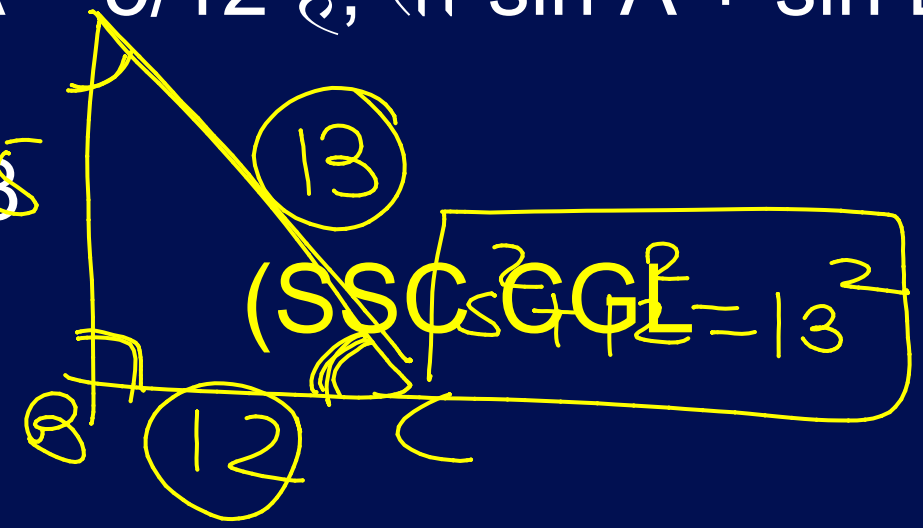
ABC is a right-angle triangle at B. If $\tan A = 5/12$, then $\sin A + \sin B$ will be equal to:

ABC, B पर एक समकोण त्रिभुज है। यदि $\tan A = 5/12$ है, तो $\sin A + \sin B$ बराबर होगा:

- (A) $18/13$ (B) $30/13$ (C) $40/13$ (D) $17/13$

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$$\frac{17}{13}$$



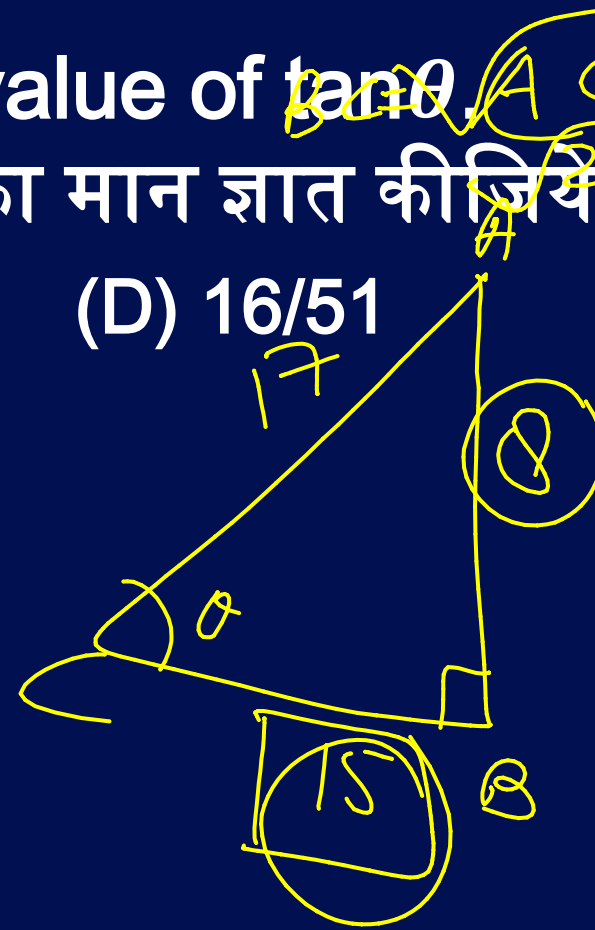


If $\sin \theta = 8/17$, then find the value of $\tan \theta$.

यदि $\sin \theta = 8/17$ है, तो $\tan \theta$ का मान ज्ञात कीजिये।

- (A) $8/15$ (B) $15/17$ (C) $2/17$ (D) $16/51$

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$(AC)^2 = (AB^2)$
 $17^2 - 8^2 = \sqrt{225} = 15$

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$8^2 + 15^2 = 17^2$





If θ is an acute angle and $\tan\theta + \cot\theta = 2$, then the value of $\tan^2\theta + \cot^2\theta + 2\tan^5\theta \cot^4\theta$ is: $\theta = 45^\circ$

यदि θ एक न्यून कोण है और $\tan\theta + \cot\theta = 2$ है, तो $\tan^2\theta + \cot^2\theta + 2\tan^5\theta \cot^4\theta$ का मान है:

- (A) 3 (B) 4

- (C) 1 (D) 2

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\downarrow

$(1 + 1) + (2 \times 1 \times 1)$

$= 4$





If $\tan A = 5/12$, then the value of $\cos A + \sin A =$ _____.

यदि $\tan A = 5/12$ है, तो $\cos A + \sin A$ का मान = _____ है।

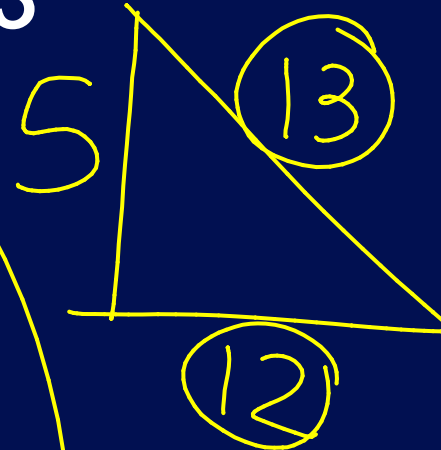
- (A) 12/5
- (B) 13/5
- (C) 5/13
- (D) 17/13

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$$\frac{12}{13} + \frac{5}{13}$$

$$\frac{17}{13}$$



$$5^2 + 12^2 = 13^2$$





What is the value of

$$\frac{\cos 37^\circ}{\sin 53^\circ}$$

$$\frac{\cos 37^\circ}{\sin 53^\circ}$$

का मान है

$$\sin(90 - 37^\circ)$$

(A) 1/2

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

(C) 0

(D) 1

$$\cos 37^\circ = 1$$

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$$\frac{\sin A}{\cos B} = 1$$

$$\frac{\cos A}{\sin B} = 1$$

$$\sin(90 - \theta) = \cos \theta$$

$$\cos(90 - \theta) = \sin \theta$$

$$\tan(90 - \theta) = \cot \theta$$

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$$\cot(90 - \theta) = \tan \theta$$

$$\sec(90 - \theta) = \operatorname{cosec} \theta$$

$$\operatorname{cosec}(90 - \theta) = \sec \theta$$





If $\tan \theta + \cot \theta = 12$, then $\tan^2 \theta + \cot^2 \theta$ is: $x + \frac{1}{x} = k$

यदि $\tan \theta + \cot \theta = 12$, तो $\tan^2 \theta + \cot^2 \theta$ है: $x^2 + \frac{1}{x^2} = k^2 - 2$

- (A) 66 (B) 166 (C) 142 (D) 146

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$$12^2 - 2$$
$$144 - 2$$
$$142$$





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What is the value of $\tan 6^\circ \times \tan 45^\circ \times \tan 84^\circ$?

$\tan 6^\circ \times \tan 45^\circ \times \tan 84^\circ$ का मान क्या है?

- (A) 1 (B) $\tan 6^\circ \times \tan 39^\circ$ (C) 3 (D) 8

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If $5 \sin^2 A + 3 \cos^2 A = 4$, $0 < A < 90^\circ$, then what is the value of $\tan A$?

यदि $5 \sin^2 A + 3 \cos^2 A = 4$, $0 < A < 90^\circ$ है, तो $\tan A$ का मान क्या है?

- (A) 0 (B) 3 (C) 1 (D) 2

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If $\operatorname{cosec} \theta + \cot \theta = 2$, then what is the value of $\operatorname{cosec} \theta$?

यदि $\operatorname{cosec} \theta + \cot \theta = 2$ है, तो $\operatorname{cosec} \theta$ का मान क्या है?

- (A) $5/4$ (B) $\sqrt{2}$ (C) $\sqrt{5}$ (D) $3/2$

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n.w



