



## MATHS

### BOOKS - CHHAYA PUBLICATION MATHS (BENGALI ENGLISH)

#### TRIGONOMETRIC RATIOS OF COMPOUND ANGLES

##### Illustrative Examples

1. Find the values of

$$\sin 15^\circ$$



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2. Find the values of

$$\cos 105^\circ$$



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3. Find the values of

$$\tan 75^\circ$$



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4. Prove that,  $\tan(45^\circ + \theta) = \frac{1 + \tan \theta}{1 - \tan \theta}$ .



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5. From the formula of  $\sin(A + B)$ , deduce the formulae of  $\cos(A + B)$  and  $\cos(A - B)$ .



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6. If  $\sin \alpha = \frac{1}{\sqrt{10}}$ ,  $\cos \beta = \frac{2}{\sqrt{5}}$  and  $\alpha, \beta$  are positive acute angles, then

find the value of  $(\alpha + \beta)$



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7. If A,B,C are three positive acute angles and  $\tan A = \frac{1}{2}$ ,  $\tan B = \frac{1}{5}$ ,  $\tan C = \frac{1}{8}$ , show that,  $A + B + C = \frac{\pi}{4}$ .



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8. Prove the following identities:

$$\sin 63^\circ 32' \sin 33^\circ 32' + \sin 26^\circ 28' \sin 56^\circ 28' = \frac{\sqrt{3}}{2}$$



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9. Prove the following identities:  $1 + \tan \theta \cdot \tan \frac{\theta}{2} = \sec \theta$



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10. Prove the following identities:  $\frac{\cos 10^\circ - \sin 10^\circ}{\cos 10^\circ + \sin 10^\circ} = \tan 35^\circ$



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11. Prove the following identities:

$$\tan 3A \tan 2A \tan A = \tan 3A - \tan 2A - \tan A$$



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12. Prove the following identities:  $\tan 50^\circ = \tan 40^\circ + 2\tan 10^\circ$



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13. Prove the following identities:  $\sec(\alpha + \beta) = \frac{\sec \alpha \sec \beta}{1 - \tan \alpha \tan \beta}$



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**14.** Prove the following identities:

$$\frac{\sin(2A + B)}{\sin A} - 2 \cos(A + B) = \frac{\sin B}{\sin A}$$



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**15.** Simplify:  $\frac{\sin(A - B)}{\sin A \sin B} + \frac{\sin(B - C)}{\sin B \sin C} + \frac{\sin(C - A)}{\sin C \sin A}$



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**16.**

Simplify:

$$\cot(\beta - \gamma)\cot(\gamma - \alpha) + \cot(\gamma - \alpha)\cot(\alpha - \beta) + \cot(\alpha - \beta)\cot(\beta - \gamma)$$



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**17.** Show that,  $\cos^2 \alpha + \cos^2(120^\circ - \alpha) + \cos^2(120^\circ + \alpha) = \frac{3}{2}$ .



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**18.** An angle  $\theta$  is divided into two parts so that the ratio of the tangents of the parts is  $k$ , if the difference,

$$\sin \phi = \frac{k - 1}{k + 1} \sin \theta$$



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**19.** If  $2 \tan \theta = \cot \phi$ , show that  $\cos(\theta - \phi) = 3 \cos(\theta + \phi)$ .



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**20.** If  $A + B = 225^\circ$ , show that,  $\frac{\cot A}{1 + \cot A} \cdot \frac{\cot B}{1 + \cot B} = \frac{1}{2}$ .



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**21.**

If  $A + B + C = \pi$  and  $\cos A = \cos B \cos C$ , show that  $\tan B \tan C = 2$



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22.

If

$$p \sin(\alpha + x) = q \sin(\alpha + y), \text{ show that, } \tan \alpha = \frac{q \sin y - p \sin x}{p \cos x - q \cos y}.$$



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23. If  $\sin(A + B) + \sin(B + C) + \cos(C - A) = -\frac{3}{2}$  show that,  
 $\sin A + \cos B + \sin C = 0, \cos A + \sin B + \cos C = 0.$



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24. Find the value of  $\cos^2\left(\frac{\pi}{8} - \frac{\theta}{2}\right) - \sin^2\left(\frac{\pi}{8} + \frac{\theta}{2}\right).$



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25. If  $0 < x < \frac{\pi}{2}$  and  $\cos x + \sin x = \sqrt{2}$ , then find the value of  $\sin 3x$ .



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**26.**

If  $\tan x - \tan y = a$  and  $\cot y - \cot x = b$ , prove that,  $\frac{1}{a} + \frac{1}{b} = \cot(x - y)$



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**27.** If  $\left( \frac{\tan(A - B)}{\tan A} \right) + \frac{\sin^2 C}{\sin^2 A} = 1$ , show that,  $\tan A \tan B = \tan^2 C$ .



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**28.** If  $\tan \beta = \frac{\sin \alpha \cos \alpha}{2 + \cos^2 \alpha}$ , prove that  $3 \tan(\alpha - \beta) = 2 \tan \alpha$



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**29.**

If  $\cos x + \cos y + \cos z = 0$  and  $\sin x + \sin y + \sin z = 0$ , then show that  
 $\cos(x - y) + \cos(y - z) + \cos(z - x) = -\frac{3}{2}$ .



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30. Find the maximum and minimum values of  $3\cos\theta + 4\sin\theta + 5$ .

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31.

If  $\frac{a\cos\theta\sec\phi - x}{a\sin(\theta+\phi)} = \frac{y - b\sin\theta\sec\phi}{b\cos(\theta+\phi)} = \tan\phi$ , show that,  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ .

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32.

If  $(a+b)\tan(\theta-\phi) = (a-b)\tan(\theta+\phi)$  and  $a\cos 2\phi + b\cos 2\theta = c$ , sh

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33.

If  $\frac{\sin(\alpha - \beta)}{\sin \beta} = \frac{\sin(\alpha + \theta)}{\sin \theta}$ , prove that  $\cot \beta - \cot \theta = \cot(\alpha + \theta) + \cot(\alpha - \beta)$



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34. Show that  $\cot 16^\circ \cot 44^\circ + \cot 44^\circ \cot 76^\circ + \cot 76^\circ \cot 16^\circ = 3$



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35. If  $\frac{x}{\tan(\theta + \alpha)} = \frac{y}{\tan(\theta + \beta)} = \frac{z}{\tan(\theta + \gamma)}$ , prove that  
$$\frac{x+y}{x-y} \sin^2(\alpha - \beta) + \frac{y+z}{y-z} \sin^2(\beta - \gamma) + \frac{z+x}{z-x} \sin^2(\gamma - \alpha) = 0$$



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36. If  $\frac{\sin(\theta + \varphi)}{\cos(\theta - \varphi)} = \frac{1-x}{1+x}$ , show that  $\tan\left(\frac{\pi}{4} - \theta\right) \tan\left(\frac{\pi}{4} - \varphi\right) = x$



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## Multiple Choice Type Questions

1.  $\sin(A + B)\sin(A - B) =$

A.  $\sin^2 A - \sin^2 B$

B.  $\cos^2 A - \sin^2 B$

C.  $\cos^2 B - \sin^2 B$

D.  $\cos^2 A - \cos^2 B$

**Answer: A**



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2.  $\cos(A + B)\cos(A - B) =$

A.  $\sin^2 A - \sin^2 B$

B.  $\cos^2 A - \sin^2 B$

C.  $\cos^2 B - \sin^2 B$

D.  $\cos^2 A - \cos^2 B$

**Answer: B**



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3.  $\sin(45^\circ - \theta) =$

A.  $\frac{1}{\sqrt{3}}(\sin \theta - \cos \theta)$

B.  $\frac{1}{\sqrt{2}}(\sin \theta - \cos \theta)$

C.  $\frac{1}{\sqrt{3}}(\cos \theta - \sin \theta)$

D.  $\frac{1}{\sqrt{2}}(\cos \theta - \sin \theta)$

**Answer: D**



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4.  $\tan\left(\frac{\pi}{4} + \theta\right)\tan\left(\frac{\pi}{4} - \theta\right) =$

A. 0

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

C. 1

D.  $\sqrt{3}$

**Answer: C**



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5.  $\cot 2\theta + \tan \theta =$

A.  $\sin 2\theta$

B.  $\cot 2\theta$

C.  $\cos ec 2\theta$

D.  $\tan 2\theta$

**Answer: C**



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**6.**  $2 \cos\left(\frac{\pi}{3} + A\right) =$

A.  $\cos A - \sqrt{3} \sin A$

B.  $\cos A - \sqrt{2} \sin A$

C.  $\sin A - \sqrt{3} \cos A$

D.  $\sin A - \sqrt{2} \cos A$

**Answer:** A



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**7.** If  $\sin A = \frac{3}{5}$ ,  $\cos B = \frac{12}{13}$ , where A and B both lie in second quadrant, then the value of  $\sin(A + B)$  is -

A.  $\frac{56}{65}$

B.  $-\frac{56}{65}$

C.  $\frac{65}{56}$

D.  $-\frac{65}{56}$

**Answer: B**



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8.  $\frac{\cos 9^\circ + \sin 9^\circ}{\cos 9^\circ - \sin 9^\circ} =$

A.  $\sin 54^\circ$

B.  $\cos 54^\circ$

C.  $\tan 54^\circ$

D.  $\cot 54^\circ$

**Answer: C**



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9. If  $\sin A + \sin B = 2$ , then which of the following is the value of  $\sin (A + B)$ ?

A. 2

B. 0

C. 1

D. -1

**Answer: B**



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10. If  $\sin \theta + \sin \phi = 2$ , then which of the following is the value of  $\cos(\theta + \phi)$

A. 0

B. 1

C. -1

D. 2

**Answer: C**



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11. If  $\cos A + \cos B = 2$ , then which of the following is the value of  $\cos(A + B)$ ?

A. 1

B. 0

C. -1

D. 2

Answer: A



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12. If  $\tan A = \frac{3}{4}$  and  $\tan B = \frac{4}{3}$ , then which of the following is the value of  $(A + B)$ ?

A.  $\frac{\pi}{4}$

B.  $\frac{3\pi}{4}$

C.  $\pi$

D.  $\frac{\pi}{2}$

**Answer: D**



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### Very Short Answer Type Questions

1. Find the values:

$$\sin(-75^\circ)$$



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2. Find the values:

$$\cos 15^\circ$$



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**3.** Find the values:

$$\tan(-105^\circ)$$



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**4.** Find the values:

$$\sec(-75^\circ)$$



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**5.** Prove that,

$$\tan 75^\circ - \cot 75^\circ = 4\sin 60^\circ$$



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**6. Prove that,**

$$\cos \alpha + \cos(120^\circ + \alpha) + \cos(120^\circ - \alpha) = 0$$



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**7. Prove that,**

$$\tan 35^\circ + \tan 10^\circ + \tan 35^\circ \tan 10^\circ = 1$$



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**8. Prove that,**

$$\tan 8\alpha - \tan 5\alpha - \tan 3\alpha = \tan 8\alpha \tan 5\alpha \tan 3\alpha$$



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**9. Prove that,**

$$\tan 43^\circ = \frac{\cos 2^\circ - \sin 2^\circ}{\cos 2^\circ + \sin 2^\circ}$$





10. Prove that,

$$\tan 62^\circ = 2\tan 34^\circ + \tan 28^\circ$$



11. If  $\cos \theta = \frac{4}{5}$ , then find the value of  $\cos 2\theta$ .



12. If A,B,C are positive acute angles and

$$\tan A = \frac{4}{7}, \tan B = \frac{1}{7}, \tan C = \frac{1}{8}, \text{ prove that } A + B + C = 45^\circ$$



13.

Find

$\cos(\theta + \phi)$  where  $\theta$  and  $\phi$  are acute angles and  $\sin \theta = \frac{4}{5}$  and  $\sin \phi$



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14. If  $\sec \theta = \frac{5}{4}$ ,  $\operatorname{cosec} \phi = \frac{13}{12}$  then find the value of  $\sec(\theta + \phi)$ .



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15.

If  $\tan \alpha = \frac{7}{5}$ ,  $\tan \beta = \frac{5}{7}$  then find the values of  $\tan(\alpha + \beta)$  and  $\cot(\alpha - \beta)$



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16.

If  $\sin \theta = \frac{3}{5}$ ,  $\tan \phi = \frac{8}{15}$  and  $\theta$  and  $\phi$  lie in the first and third quadrants



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17. Prove that,  $\frac{\cos 20^\circ + \sin 20^\circ}{\cos 20^\circ - \sin 20^\circ} = \tan 65^\circ$

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18. Prove that,

$$\operatorname{cosec}(\theta + \phi) = \frac{\operatorname{cosec}\theta\operatorname{cosec}\phi}{\cot\theta + \cot\phi}$$

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19. Prove that,

$$\cos 67^\circ 24' \cos 7^\circ 24' + \cos 82^\circ 36' \cos 22^\circ 36' = \frac{1}{2}$$

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20. Prove that,

$$\tan(B - C) + \tan(C - A) + \tan(A - B) = \tan(B - C)\tan(C - A)\tan(A - B)$$





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21. Show that the value of each of the following expressions is independent of  $\theta$

$$\left[ \cot\left(\frac{\pi}{4} - \theta\right) - 1 \right] (\cot \theta - 1)$$



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22. Show that the value of each of the following expressions is independent of  $\theta$

$$\cos^2\left(\frac{\pi}{4} + \theta\right) - \sin^2\left(\frac{\pi}{4} - \theta\right)$$



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23.

If  $\cos(\alpha - \beta) + 1 = 0$ , show that  $\cos \alpha + \cos \beta = 0$  and  $\sin \alpha + \sin \beta = 0$ .



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## Short Answer Type Questions

1. Prove that,

$$\sin^2 \alpha + \sin^2(120^\circ - \alpha) + \sin^2(120^\circ + \alpha) = \frac{3}{2}$$



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2. Prove that,

$$\sin^2\left(\frac{\pi}{8} + \frac{\theta}{2}\right) - \sin^2\left(\frac{\pi}{8} - \frac{\theta}{2}\right) = \frac{1}{\sqrt{2}} \sin \theta$$



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3. Prove that,

$$\cos^2 A + \cos^2\left(A + \frac{\pi}{3}\right) + \cos^2\left(A - \frac{\pi}{3}\right) = \frac{3}{2}$$



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**4. Prove that,**

$$\tan 70^\circ = 2\tan 50^\circ + \tan 20^\circ$$



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**5. Simplify:**

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



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**6. Simplify:**

$$1 + \frac{\sin(A - B)}{\cos A \cos B} + \frac{\sin(B - C)}{\cos B \cos C} + \frac{\sin(C - A)}{\cos C \cos A}$$



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**7. Simplify:**

$$\tan\left(\frac{\pi}{4} + \theta\right)\tan\left(\frac{3\pi}{4} + \theta\right)$$



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8. Simplify:

$$\sin(B + C)\sin(B - C) + \sin(C + A)\sin(C - A) + \sin(A + B)\sin(A - B)$$



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9. Find the expansion:

$$\sin(A - B + C)$$



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10. Find the expansion:

$$\tan(A + B - C)$$



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11.

If  $\sin \alpha \sin \beta - \cos \alpha \cos \beta + 1 = 0$ , show that,  $\sin(\alpha + \beta) = 0$ , hence dedu



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12.

If  $A + B = 45^\circ$ , show that,  $(1 + \tan A)(1 + \tan B) = 2$ , hence find the va



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13. If  $A + B + C = \pi$  and  $\cos A = \cos B \cos C$ , show that

$\tan A = \tan B + \tan C$



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14. If  $A + B + C = \pi$  and  $\cos A = \cos B \cos C$ , show that

$2 \cot B \cot C = 1$



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15. An angle  $\theta$  is divided into two parts  $\alpha$  and  $\beta$  such that

$$\tan \alpha : \tan \beta = x : y; \text{ prove that } \sin(\alpha - \beta) = \frac{x - y}{x + y} \sin \theta.$$



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16. If  $\tan \theta = \frac{Q \sin \alpha}{P + Q \cos \alpha}$ , prove that,  $\tan(\alpha - \theta) = \frac{P \sin \alpha}{Q + P \cos \alpha}$ .



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17.

If  $\sin(\alpha + \beta) = n \sin(\alpha - \beta)$  and  $n \neq -1$ , prove that  $\cot \alpha = \frac{n - 1}{n + 1}$



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18. If  $\cot \alpha \cot \beta = 3$ , show that,  $\frac{\cos(\alpha - \beta)}{\cos(\alpha + \beta)} = 2$



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19. Find the value of  $\frac{\sin(\alpha + \beta)}{\sin(\alpha - \beta)}$ , given that  $\tan \alpha = 2 \tan \beta$ .



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20. If  $0^\circ < \theta < 90^\circ$  and  $\cos \theta + \sin \theta = \sqrt{2}$ , find the value of  $\cos 3\theta$ .



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21.

- If  $\tan \alpha = \frac{x \sin \beta}{1 - x \cos \beta}$  and  $\tan \beta = \frac{y \sin \alpha}{1 - y \cos \alpha}$ , show that,  $\frac{\sin \alpha}{\sin \beta} = \frac{x}{y}$



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22.

If  $\tan \theta + \tan \phi = x$  and  $\cot \theta + \cot \phi = y$ , prove that  $\cot(\theta + \phi) = \frac{1}{x} -$



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23.

If  $\tan \theta = \frac{2x - K}{K\sqrt{3}}$  and  $\tan \varphi = \frac{x\sqrt{3}}{2K - x}$ , then show that  $|\varphi - \theta| = 30^\circ$



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24.

If  $\cos(\theta - \alpha) = p$  and  $\sin(\theta + \beta) = q$ , show that  $p^2 + q^2 - 2pq \sin(\alpha + \beta) = 1$



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25. Eliminate  $\theta$  and  $\phi$

$$\sin \theta + \sin \phi = a, \cos \theta + \cos \phi = b, 0 - \phi = \alpha$$



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**26.** Eliminate  $\theta$  and  $\phi$

$$\tan \theta + \tan \phi = x, \cot \theta + \cot \phi = y, \theta + \phi = \alpha$$



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### Long Answer Type Questions

**1.** Prove that  $\tan(A + B) - \tan(A - B) = \frac{\sin 2B}{\cos^2 B - \sin^2 A}$ .



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**2.** If  $\tan \beta = \frac{n \sin \alpha \cos \alpha}{1 - n \sin^2 \alpha}$ , show that,  $\tan(\alpha - \beta) = (1 - n)\tan \alpha$ .



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3.

If  $m \tan(\theta - 30^\circ) = n \tan(\theta + 120^\circ)$ , show that,  $2 \cos 2\theta = \frac{m+n}{m-n}$ .



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4. If  $\cos(\beta - \gamma) + \cos(\gamma - \alpha) + \cos(\alpha - \beta) = -\frac{3}{2}$ , show that,

$\cos \alpha + \cos \beta + \cos \gamma = 0$  and  $\sin \alpha + \sin \beta + \sin \gamma = 0$ . Hence deduce that,

$$\cos(\beta - \gamma) = \cos(\gamma - \alpha) = \cos(\alpha - \beta) = -\frac{1}{2}.$$



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5.

If  $\alpha \neq \beta$  and  $a \tan \alpha + b \tan \beta = (a+b) \tan \frac{\alpha+\beta}{2}$ , show that  $\frac{\cos \alpha}{\cos \beta} = \dots$



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6. If  $\sin \theta = k \sin(\theta + \phi)$ , show that,  $\tan(\theta + \phi) = \frac{\sin \phi}{\cos \phi - k}$ .



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7. If  $\frac{\cot(\alpha - \beta)}{\cot \alpha} + \frac{\cos^2 \gamma}{\cos^2 \alpha} = 1$ , show that,  $\tan^2 \gamma + \tan \alpha \cot \beta = 0$ .



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8.

If  $\tan \theta = \frac{x \sin \alpha + y \sin \beta}{x \cos \alpha + y \cos \beta}$ , prove that  $x \sin(\theta - \alpha) + y \sin(\theta - \beta) = 0$



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9. Show that for all real value of x,

$$c - \sqrt{a^2 + b^2} \leq a \cos x + b \sin x + c \leq c + \sqrt{a^2 + b^2}$$



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10. Express  $(\cos \theta - \sin \theta)$  in the form  $r \cos(\theta + \alpha)$  and  $(\sqrt{3} \sin \theta + \cos \theta)$  in the form  $r \sin(\theta + \beta)$ .



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11. Find the maximum and minimum values of  $5 \cos \theta + 12 \sin \theta + 12$ .



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12. Find the maximum value of  $a \cos \theta + b \sin(\theta + \alpha)$  [ $a, b, \alpha$  are constants].



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Multiple Correct Answers Type

1.

If  $\tan(\pi \cos \theta) = \cot(\pi \sin \theta)$ , then the value of  $\cos\left(\theta - \frac{\pi}{4}\right)$  will be –

A.  $\frac{1}{2}$

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

C.  $-\frac{1}{2}$

D.  $-\frac{1}{2\sqrt{2}}$

**Answer:** B::D



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2.

If  $\sqrt{2} \cos A = \cos B + \cos^3 B$  and  $\sqrt{2} \sin A = \sin B - \sin^3 B$ , then the value

A.  $\frac{1}{2}$

B.  $\frac{1}{3}$

C.  $-\frac{1}{2}$

D.  $-\frac{1}{3}$

**Answer:** B::D



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3. If  $\tan \alpha = x + 1$  and  $\tan \beta = x - 1$ , then the value of  $x$  will be-

A.  $\sqrt{2 \cot(\alpha - \beta)}$

B.  $\sqrt{2 \tan(\alpha - \beta)}$

C.  $-\sqrt{2 \tan(\alpha - \beta)}$

D.  $-\sqrt{2 \cot(\alpha - \beta)}$

**Answer:** A::D



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4.

If  $\tan A = \frac{3}{4}$  and  $\tan B = -\frac{5}{12}$ , then the value of  $\sin(A + B)$  is equal to

A.  $-\frac{16}{65}$

B.  $\frac{16}{65}$

C.  $-\frac{56}{65}$

D.  $\frac{56}{65}$

**Answer: A::B**



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5. If  $\tan A = \frac{1}{2}$  and  $\tan B = \frac{1}{3}$ , then the value of  $A + B$  will be

A.  $25^\circ$

B.  $45^\circ$

C.  $75^\circ$

D.  $90^\circ$

**Answer: B**



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**Integer Answer Type**

1.  $\tan(\alpha + \beta) = \frac{1}{2}$ ,  $\tan(\alpha - \beta) = \frac{1}{3}$  then the value of  $\tan^2 \alpha$  is –



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2. If  $2 \tan \theta = \cot \phi$ , then the value of  $\frac{\cos(\theta - \phi)}{\cos(\theta + \phi)}$  is –



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3. The minimum value of  $3 \cos \theta + 4 \sin \theta + 5$  is



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4. If  $A + B = 225^\circ$ , then the value of  $\frac{1 + \cot A}{\cot A} \cdot \frac{1 + \cot B}{\cot B}$  is –

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5.

If  $\cos \alpha = \frac{12}{13}$ ,  $\cos \beta = \frac{3}{5}$  and  $\cos \gamma = \frac{63}{65}$  where  $0 < \alpha, \beta, \gamma < \frac{\pi}{2}$  then the v

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### Matrix Match Type

1. If  $\cos \theta = \frac{4}{5}$ , then find the value of  $\sin 2\theta$ .

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2. If  $\cos \theta = \frac{4}{5}$ , then find the value of  $\tan 2\theta$ .

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## Comprehension Type

1.  $\sin \alpha + \sin \beta = a$  and  $\cos \alpha + \cos \beta = b$

$\sin(\alpha + \beta) =$

A.  $\frac{2ab}{a^2 + b^2}$

B.  $\frac{2ab}{a^2 - b^2}$

C.  $\frac{a^2 + b^2}{2ab}$

D.  $\frac{a^2 - b^2}{2ab}$

**Answer: A**



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2.  $\sin \alpha + \sin \beta = a$  and  $\cos \alpha + \cos \beta = b$

$\cos(\alpha + \beta) =$

- A.  $\frac{a^2 - b^2}{a^2 + b^2}$
- B.  $-\frac{a^2 - b^2}{a^2 + b^2}$
- C.  $\frac{a^2 + b^2}{a^2 - b^2}$
- D.  $-\frac{a^2 + b^2}{a^2 - b^2}$

**Answer:** B



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3.  $\sin \alpha + \sin \beta = a$  and  $\cos \alpha + \cos \beta = b$

$$\frac{\tan \alpha + \tan \beta}{1 - \tan \alpha \tan \beta} =$$

A.  $\frac{a^2 + b^2}{2ab}$

B.  $\frac{b^2 - a^2}{2ab}$

C.  $\frac{2ab}{b^2 + a^2}$

D.  $\frac{2ab}{b^2 - a^2}$

**Answer:** D



4. ABC is an obtuse angled triangle whose  $\angle C = 135^\circ$

Value of  $(1 + \tan A)(1 + \tan B)$  is-

A. 0

B. 1

C. 2

D. 4

**Answer: C**



5. ABC is an obtuse angled triangle whose  $\angle C = 135^\circ$

Value of  $(\cot A - 1)(\cot B - 1)$  is

A. 1

B. 2

C. 3

D. undefined

**Answer: B**



**Watch Video Solution**

**6.** ABC is an obtuse angled triangle whose  $\angle C = 135^\circ$

Value of  $\tan A + \cot B$  is-

A. 2

B.  $2\sqrt{2}$

C. 0

D. 1

**Answer: B**



**Watch Video Solution**

