



1. If $\sin B = \frac{9}{41}$, then what is the value of $\cot B$, where $0^\circ < B < 90^\circ$?

यदि $\sin B = \frac{9}{41}$ है, तो $\cot B$ का मान क्या होगा, जहाँ $0^\circ < B < 90^\circ$ है?

- (a) $\frac{41}{9}$
- (b) $\frac{40}{9}$
- (c) $\frac{9}{41}$
- (d) $\frac{9}{40}$

2. If $\cos\theta = 9/13$, then what is the value of $\operatorname{cosec}\theta$?

- (a) $\frac{13}{\sqrt{22}}$
- (b) $\frac{13\sqrt{22}}{44}$
- (c) $\frac{2\sqrt{22}}{13}$
- (d) $\frac{\sqrt{22}}{13}$

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3. If θ is an acute angle and $\sin\theta = \frac{43}{47}$, what is the value of $\cos\theta$?

यदि θ एक न्यूनकोण है और $\sin\theta = \frac{43}{47}$, तो $\cos\theta$ का मान क्या है?

- (a) $\frac{43}{6\sqrt{10}}$
- (b) $\frac{47}{6\sqrt{10}}$
- (c) $\frac{6\sqrt{10}}{43}$
- (d) $\frac{6\sqrt{10}}{47}$

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4. If $5\cos\theta=4\sin\theta, 0^\circ \leq \theta \leq 90^\circ$, then what will be the value of $\sec\theta$.

यदि $5\cos\theta=4\sin\theta, 0^\circ \leq \theta \leq 90^\circ$ है, तो $\sec\theta$ का मान ज्ञात करें।

- (a) $\frac{\sqrt{41}}{5}$
- (b) $\frac{3}{5}$
- (c) $\frac{\sqrt{41}}{16}$
- (d) $\frac{\sqrt{41}}{4}$

5. If $\sin A = \frac{8}{17}$, then what is the value of

$\cot A + \sec A$?

यदि $\sin A = \frac{8}{17}$ है, तो $\cot A + \sec A$ का मान क्या है?

- (a) $4\frac{1}{120}$
- (b) $2\frac{1}{120}$

(c) $5\frac{1}{120}$ (d) $3\frac{1}{120}$ 6. If $\tan \theta = \frac{8}{15}$, then the value of $\sqrt{\frac{1-\sin \theta}{1+\sin \theta}}$ is:यदि $\tan \theta = \frac{8}{15}$, तो $\sqrt{\frac{1-\sin \theta}{1+\sin \theta}}$ का मान क्या है?(a) $\frac{1}{5}$ (b) $\frac{3}{5}$ (c) $\frac{2}{5}$ (d) $\frac{4}{5}$

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7. If $4\cot A = 5$, then what is the value of $6 \sec A \tan A$?यदि $4\cot A = 5$, तो $6 \sec A \tan A$ का मान क्या है?(a) $\frac{20\sqrt{41}}{21}$ (b) $\frac{25\sqrt{41}}{24}$ (c) $\frac{24\sqrt{41}}{25}$ (d) $3/2$

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8. If $\cos \theta = \frac{7}{3\sqrt{6}}$ and θ is an acute angle, then the value of $27 \sin^2 \theta - \frac{3}{2}$ is:यदि $\cos \theta = \frac{7}{3\sqrt{6}}$ है और θ न्यून कोण है, तो $27 \sin^2 \theta - \frac{3}{2}$ का मान ज्ञात करें।

(a) 12

(b) 15

(c) 1

(d) 9

9. If $\operatorname{cosec} A = 10$, then what is the value of $20 \sin A + 9\sqrt{11} \sec A$?यदि $\operatorname{cosec} A = 10$ है, तो $20 \sin A + 9\sqrt{11} \sec A$ का मान ज्ञात करें।

Given that A is an acute angle.

दिया गया है कि, A न्यून कोण है।

(a) 23

(b) 34

(c) 32

(d) 30

10.

If $\sin A = \frac{2}{3}$, then find the value of $(7 - \tan A)(3 + \cos A)$.यदि $\sin A = \frac{2}{3}$ हैतो, $(7 - \tan A)(3 + \cos A)$ का मान ज्ञात कीजिए।(a) $\frac{61}{3} + \frac{17}{\sqrt{5}}$ (b) $\frac{61}{3} - \frac{17}{3\sqrt{5}}$ (c) $\frac{61}{3} + \frac{17}{3\sqrt{5}}$ (d) $\frac{61}{3\sqrt{5}} + \frac{17}{3}$
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11.

If $\sin\theta = \frac{5}{6}$, the value of $\cot\theta \cdot \sin\theta \cdot \cos\theta$ is _____ .

यदि $\sin\theta = \frac{5}{6}$, तो $\cot\theta \cdot \sin\theta \cdot \cos\theta$ का मान है।

- (a) $\frac{6}{5}$ (b) $\frac{25}{36}$ (c) $\frac{5}{6}$ (d) $\frac{11}{36}$

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12. If $6 \sec\theta = 10$, then find the value of $(5 \operatorname{cosec}\theta - 3 \cot\theta)/(4 \cos\theta + 3 \sin\theta)$.

यदि $6 \sec\theta = 10$ है, तो $(5 \operatorname{cosec}\theta - 3 \cot\theta)/(4 \cos\theta + 3 \sin\theta)$ का मान ज्ञात कीजिए।

- (a) $\frac{2}{3}$
 (b) $\frac{3}{2}$
 (c) $\frac{5}{6}$
 (d) $\frac{6}{5}$

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13. If $\operatorname{cosec}\theta = 1.25$, then $\frac{4\tan\theta - 5\cos\theta + 1}{\sec\theta + 4\cot\theta - 1} = ?$

यदि $\operatorname{cosec}\theta = 1.25$ है, तो $\frac{4\tan\theta - 5\cos\theta + 1}{\sec\theta + 4\cot\theta - 1} = ?$

- (a) 2 (b) $\frac{10}{11}$ (c) $\frac{9}{10}$ (d) $\frac{1}{2}$

14. If $\cos\theta = \frac{12}{13}$, then the value of $\frac{\sin\theta(1-\tan\theta)}{\tan\theta(1+\operatorname{cosec}\theta)}$ is:

यदि $\cos\theta = \frac{12}{13}$ है तो $\frac{\sin\theta(1-\tan\theta)}{\tan\theta(1+\operatorname{cosec}\theta)}$ का मान क्या होगा?

- (a) $\frac{25}{78}$ (b) $\frac{35}{234}$ (c) $\frac{35}{108}$ (d) $\frac{25}{156}$

15. If $\cot\theta = \frac{15}{8}$, θ is an acute angle, then find the value of $\frac{(1-\cos\theta)(2+2\cos\theta)}{(2-2\sin\theta)(1+\sin\theta)}$.

यदि $\cot\theta = \frac{15}{8}$ है, θ न्यून कोण है, तो $\frac{(1-\cos\theta)(2+2\cos\theta)}{(2-2\sin\theta)(1+\sin\theta)}$ का मान ज्ञात करें।

- (a) $\frac{16}{15}$
 (b) $\frac{64}{225}$
 (c) $\frac{225}{64}$
 (d) $\frac{8}{15}$

16. If $\sec\left(90^\circ - \frac{3\theta}{2}\right) = \sqrt{2}$, $0^\circ < \theta < 90^\circ$, then the value of $2\sin\theta + 4\cos 2\theta$ will be :

यदि $\sec\left(90^\circ - \frac{3\theta}{2}\right) = \sqrt{2}$, $0^\circ < \theta < 90^\circ$ है, तो $2\sin\theta + 4\cos 2\theta$ का मान ज्ञात करें।

- (a) 4
 (b) 2
 (c) 3



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(d)

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17. If $\operatorname{cosec} \theta = 1\frac{7}{22}$, find the value of $\cot^2 \theta$.

यदि $\operatorname{cosec} \theta = 1\frac{7}{22}$, तो $\cot^2 \theta$ का मान ज्ञात कीजिए।

(a) $\frac{357}{484}$

(b) $\frac{49}{484}$

(c) $\frac{225}{484}$

(d) $\frac{7}{22}$

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18. If $\tan \theta = \frac{8}{19}$, find the value of $\sec^2 \theta$.

यदि $\tan \theta = \frac{8}{19}$, तो $\sec^2 \theta$ का मान ज्ञात कीजिए।

(a) $\frac{297}{361}$

(b) $\frac{11}{19}$

(c) $1\frac{8}{19}$

(d) $1\frac{64}{361}$

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19. If $\sec \theta = 2\frac{4}{23}$, find the value of $\tan^2 \theta$.

यदि $\sec \theta = 2\frac{4}{23}$, तो $\tan^2 \theta$ का मान ज्ञात कीजिए।

(a) $3\frac{177}{529}$

(b) $2\frac{16}{529}$

(c) $1\frac{200}{529}$

(d) $3\frac{384}{529}$

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20. If $\tan A = \frac{2}{5}$, then find $\frac{\sec^2 A}{\operatorname{cosec}^2 A}$?

यदि $\tan A = \frac{2}{5}$, तो $\frac{\sec^2 A}{\operatorname{cosec}^2 A}$ ज्ञात कीजिए? (CPO 2023)

a) 3/5

b) 4/25

c) 2/5

d) 9/25

21. If $\cos A = \frac{\sqrt{10}}{\sqrt{15}}$, then the value of $\frac{\operatorname{cosec}^2 A + \tan^2 A}{\sin^2 A + \cot^2 A}$ is:

अगर $\cos A = \frac{\sqrt{10}}{\sqrt{15}}$ है, तो $\frac{\operatorname{cosec}^2 A + \tan^2 A}{\sin^2 A + \cot^2 A}$ का मान ज्ञात कीजिए।

(a) $\frac{9}{4}$

(b) $\frac{4}{9}$

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

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

22. If $\cos A = \frac{63}{65}$, then find the value of $\tan A + \cot A$ (up to two places of decimal).

यदि $\cos A = \frac{63}{65}$, तो $\tan A + \cot A$ का मान ज्ञात कीजिए (दूसरे दशमलव के दो स्थानों तक)।

(a) 3.19

(b) 5.23

(c) 4.19

(d) 2.76

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23. If $\cot \theta = \sqrt{2} + 1$, then $\operatorname{cosec} \theta \sec \theta = ?$

यदि $\cot \theta = \sqrt{2} + 1$ है, तो $\operatorname{cosec} \theta \sec \theta$ का मान ज्ञात करें।



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- (a) $\frac{\sqrt{2}}{2}$
- (b) $4\sqrt{2}$
- (c) $\frac{\sqrt{2}}{4}$
- (d) $2\sqrt{2}$

24. If $\cos\theta - \sin\theta = 0$, then $(\sin^8\theta + \cos^8\theta)$ is:

- यदि $\cos\theta - \sin\theta = 0$ है, तो $(\sin^8\theta + \cos^8\theta)$ _____ होगा।
- (a) $\frac{1}{8}$
 - (b) $\frac{1}{6}$
 - (c) $\frac{1}{2}$
 - (d) $\frac{1}{4}$

25. If $\sin\theta + \cos\theta = \sqrt{2}$, then find the value of $\operatorname{cosec}\theta + \cot\theta$.

यदि $\sin\theta + \cos\theta = \sqrt{2}$ है, तो $\operatorname{cosec}\theta + \cot\theta$ का मान ज्ञात कीजिए।

- (a) $\sqrt{2} - 1$
- (b) $\sqrt{2} + 5$
- (c) $\sqrt{3} - 1$
- (d) $\sqrt{2} + 1$

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26. If $(\cos\theta + \sin\theta) : (\cos\theta - \sin\theta) = (\sqrt{3} + 1) : (\sqrt{3} - 1)$, $0 < \theta < 90^\circ$, then what is the value of $\sec\theta$?

यदि $(\cos\theta + \sin\theta) : (\cos\theta - \sin\theta) = (\sqrt{3} + 1) : (\sqrt{3} - 1)$, $0 < \theta < 90^\circ$ है, तो $\sec\theta$ का मान क्या होगा?

- (a) $\frac{2\sqrt{3}}{3}$
- (b) 1
- (c) $\sqrt{2}$
- (d) 2

27. If $\sin\theta = \sqrt{3} \cos\theta$, then what is the value of $\frac{3\sin^2\theta + \cos\theta}{2\cos\theta + 5}$?

यदि $\sin\theta = \sqrt{3} \cos\theta$, तो $\frac{3\sin^2\theta + \cos\theta}{2\cos\theta + 5}$ का मान क्या है?

- (a) $\frac{19}{25}$
- (b) $\frac{18}{5}$
- (c) $\frac{11}{24}$
- (d) $\frac{3}{2}$

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28. If $3\tan\theta = 2\sqrt{3} \sin\theta$, $0^\circ < \theta < 90^\circ$, then the value of $\frac{3}{4} \left(\frac{\operatorname{cosec}^2 2\theta + \cot^2 2\theta}{\sin^2\theta + \tan^2 2\theta} \right)$

यदि $3\tan\theta = 2\sqrt{3} \sin\theta$, $0^\circ < \theta < 90^\circ$ है, तो $\frac{3}{4} \left(\frac{\operatorname{cosec}^2 2\theta + \cot^2 2\theta}{\sin^2\theta + \tan^2 2\theta} \right)$ का मान ज्ञात करें।

- (a) $\frac{5}{13}$
- (b) $\frac{3}{13}$
- (c) $\frac{7}{13}$
- (d) $\frac{1}{13}$

29. If $A = 22.5^\circ$, then what is the value of $10\sqrt{2}\sin 2A - 7\sqrt{2}\cos 2A + 9 \tan 2A$?

यदि $A = 22.5^\circ$ है, तो $10\sqrt{2}\sin 2A - 7\sqrt{2}\cos 2A + 9 \tan 2A$ का मान क्या है?



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- A) 12
- B) 15
- C) 10
- D) 6

30. If $\sin\theta = \frac{a}{\sqrt{a^2+b^2}}$, $0^\circ < \theta < 90^\circ$, then the value of $\sec\theta + \tan\theta$ is:

यदि $\sin\theta = \frac{a}{\sqrt{a^2+b^2}}$, $0^\circ < \theta < 90^\circ$, तो $\sec\theta + \tan\theta$ का मान है—

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

31. If $\cos\theta = \frac{4x}{1+4x^2}$ then what is the value of $\sin\theta$?

यदि $\cos\theta = \frac{4x}{1+4x^2}$ तो $\sin\theta$ का मान क्या होगा?

(a) $\frac{1+4x^2}{1-4x^2}$

(b) $\frac{1+4x^2}{4x^2}$

(c) $\frac{1-4x^2}{1+4x^2}$

(d) $\frac{1-4x^2}{4x}$

32. If $\sin\theta = \frac{2\sqrt{ab}}{a+b}$, $a > b > 0$, then the value of $\frac{\cos\theta+1}{\cos\theta-1}$ will be:

यदि $\sin\theta = \frac{2\sqrt{ab}}{a+b}$ है, $a > b > 0$ है, तो $\frac{\cos\theta+1}{\cos\theta-1}$ का मान ज्ञात करें।

(a) $-\frac{b}{a}$

(b) $-\frac{a}{b}$

(c) $\frac{a}{b}$

(d) $\frac{b}{a}$

33. If $b \sin\theta = a$, then $\sec\theta + \tan\theta = ?$

यदि $b \sin\theta = a$ है, तो $\sec\theta + \tan\theta = ?$

(a) $\sqrt{\frac{b+a}{b-a}}$



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(b) $\sqrt{\frac{1}{b+a}}$

(c) $\sqrt{\frac{1}{b-a}}$

(d) $\sqrt{\frac{b-a}{b+a}}$

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34. If $\operatorname{cosec}\theta = b/a$, then $\frac{\sqrt{3}\cot\theta+1}{\tan\theta+\sqrt{3}}$ is equal to:

यदि $\operatorname{cosec}\theta = b/a$, है, तो $\frac{\sqrt{3}\cot\theta+1}{\tan\theta+\sqrt{3}}$ _____ के बराबर है।

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

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

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

(d) $\frac{\sqrt{b^2-a^2}}{b}$

35. The value of which of the following is different from the other options?

निम्नलिखित में से किसका मान अन्य विकल्पों से भिन्न है?

1. $\sin 90^\circ$

2. $\sec 60^\circ$

3. $\cos 0^\circ$

4. $\tan 45^\circ$

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36. In ΔABC , $\angle C=90^\circ$ and $AB=c$, $BC=a$, $CA=b$, then find the value of $(\operatorname{cosec}B-\cos A)$?

a) $\frac{c^2}{ab}$ b) $\frac{b^2}{ca}$ c) $\frac{a^2}{bc}$ d) $\frac{bc}{a^2}$

37. In ΔABC , $AB = 20 \text{ cm}$, $BC = 21 \text{ cm}$ and $AC = 29 \text{ cm}$. What is the value of $\cot C + \operatorname{cosec} C - 2 \tan A$?

ΔABC में, $AB = 20 \text{ cm}$, $BC = 21 \text{ cm}$ और $AC = 29 \text{ cm}$ है। $\cot C + \operatorname{cosec} C - 2 \tan A$ का मान ज्ञात करें।

(a) $\frac{9}{20}$

(b) $\frac{7}{20}$

(c) $\frac{2}{5}$

(d) $\frac{3}{5}$

38. If $\sqrt{13} \sin \theta = 2$, then the value of $\frac{3 \tan \theta + \sqrt{13} \sin \theta}{\sqrt{13} \cos \theta - 3 \tan \theta}$ is:

यदि $\sqrt{13} \sin \theta = 2$, है, तो $\frac{3 \tan \theta + \sqrt{13} \sin \theta}{\sqrt{13} \cos \theta - 3 \tan \theta}$ का मान क्या होगा?

(a) 5

(b) 4

(c) 3

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

39. If $\tan x = 7/5$, then the value of $\frac{9 \sin x - \frac{42}{5} \cos x}{15 \sin x + 21 \cos x}$ is?

यदि $\tan x = 7/5$ है, तो $\frac{9 \sin x - \frac{42}{5} \cos x}{15 \sin x + 21 \cos x}$ का मान क्या है?

A) 0



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B) 0.1

C) 1

D) 0.5

40. If $\sec\theta = \frac{a}{b}$, $b \neq 0$, then $\frac{1-\tan^2\theta}{2-\sin^2\theta} = ?$

यदि $\sec\theta = \frac{a}{b}$, $b \neq 0$ है, तो $\frac{1-\tan^2\theta}{2-\sin^2\theta} = ?$

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

41. If $\sin\theta = \sqrt{\frac{1}{6}\sqrt{\frac{1}{6}\sqrt{\frac{1}{6}}}}$ Then, $\tan\theta + \cot\theta = ?$

- a) $\frac{36}{\sqrt{35}}$ b) $\frac{36}{35}$ c) $\frac{\sqrt{35}}{36}$ d) $\sqrt{\frac{35}{36}}$

42. $\sin\theta = \frac{8}{17}$, $\tan\alpha = \frac{15}{8}$, then find $\cos(\theta+\alpha) = ?$

- a) 0 b) 1 c) $\frac{23}{17}$ d) $\frac{15}{17}$

43. If $4\sin^2(2x-10)^\circ = 3$, $0^\circ \leq (2x-10) \leq 90^\circ$, then find the value of $\frac{\sin^4(x-5)^\circ + \cos^4(x-5)^\circ}{1-2\sin^2(3x-15)^\circ \cos^2(3x-15)^\circ}$.

यदि $4\sin^2(2x-10)^\circ = 3$, $0^\circ \leq (2x-10) \leq 90^\circ$ है, तो $\frac{\sin^4(x-5)^\circ + \cos^4(x-5)^\circ}{1-2\sin^2(3x-15)^\circ \cos^2(3x-15)^\circ}$ का मान ज्ञात करें।

- (a) 1
 (b) $\frac{5}{8}$
 (c) $-\frac{5}{8}$
 (d) -1

44. If $5\sin\theta - 4\cos\theta = 0$, $0^\circ < \theta < 90^\circ$, then the value of $\frac{5\sin\theta - 2\cos\theta}{5\sin\theta + 3\cos\theta}$ is:

यदि $5\sin\theta - 4\cos\theta = 0$, $0^\circ < \theta < 90^\circ$ है, तो $\frac{5\sin\theta - 2\cos\theta}{5\sin\theta + 3\cos\theta}$ का मान है:

- a) $\frac{3}{7}$ b) $\frac{2}{7}$ c) $\frac{5}{8}$ d) $\frac{3}{8}$

45. If $\tan\theta = \frac{5}{9}$, then $\frac{18\sin\theta - 7\cos\theta}{9\sin\theta + 11\cos\theta}$ is equal to:

यदि $\tan\theta = \frac{5}{9}$ हो तो $\frac{18\sin\theta - 7\cos\theta}{9\sin\theta + 11\cos\theta}$ का मान होगा?

- a) $\frac{5}{14}$ b) $\frac{3}{16}$ c) $\frac{2}{5}$ d) $\frac{4}{11}$

46. If $\cot\theta = \sqrt{6}$, then the value of $\frac{\operatorname{cosec}^2\theta + \sec^2\theta}{\operatorname{cosec}^2\theta - \sec^2\theta}$ is:

यदि $\cot\theta = \sqrt{6}$ है तो $\frac{\operatorname{cosec}^2\theta + \sec^2\theta}{\operatorname{cosec}^2\theta - \sec^2\theta}$ का मान :

- a) $\frac{49}{36}$ b) $\frac{43}{36}$ c) $\frac{7}{5}$ d) $\frac{48}{35}$

47. If $\tan\theta = \frac{2}{\sqrt{13}}$, then the value of $\frac{3\operatorname{cosec}^2\theta + 2\sec^2\theta}{5\operatorname{cosec}^2\theta - 4\sec^2\theta}$ will be:

यदि $\tan\theta = \frac{2}{\sqrt{13}}$, तो $\frac{3\operatorname{cosec}^2\theta + 2\sec^2\theta}{5\operatorname{cosec}^2\theta - 4\sec^2\theta}$ का मान होगा:

- (a) $\frac{41}{45}$ (b) $\frac{47}{49}$



(c) $\frac{46}{53}$

(d) $\frac{5}{7}$

48. If $\frac{\sin\theta - \cos\theta}{\sin\theta + \cos\theta} = \frac{4}{5}$, then find $\frac{\operatorname{cosec}^2\theta}{2 - \operatorname{cosec}^2\theta}$?

यदि $\frac{\sin\theta - \cos\theta}{\sin\theta + \cos\theta} = \frac{4}{5}$, तो $\frac{\operatorname{cosec}^2\theta}{2 - \operatorname{cosec}^2\theta}$ ज्ञात कीजिए?

- A) $16/25$
 B) $40/41$
 C) $41/40$
 D) $31/30$

49. If $\frac{\operatorname{cosec}\theta + \cot\theta}{\operatorname{cosec}\theta - \cot\theta} = 7$, then the value of $\frac{4\sin^2\theta + 5}{4\sin^2\theta - 1}$ is:

यदि $\frac{\operatorname{cosec}\theta + \cot\theta}{\operatorname{cosec}\theta - \cot\theta} = 7$ है, तो $\frac{4\sin^2\theta + 5}{4\sin^2\theta - 1}$ का मान ज्ञात करें।

- (a) 15
 (b) 3
 (c) 9
 (d) 12

50. If $\frac{\sec\theta + \tan\theta}{\sec\theta - \tan\theta} = 2\frac{51}{79}$ then the value of $\sin\theta$ is equal to:

यदि $\frac{\sec\theta + \tan\theta}{\sec\theta - \tan\theta} = 2\frac{51}{79}$ है, तो $\sin\theta$ का मान ज्ञात कीजिए।

- (a) $\frac{65}{144}$
 (b) $\frac{35}{72}$
 (c) $\frac{91}{144}$
 (d) $\frac{39}{72}$

51. If $\frac{\sec\theta - \tan\theta}{\sec\theta + \tan\theta} = \frac{3}{5}$, then the value of $\frac{\operatorname{cosec}\theta + \cot\theta}{\operatorname{cosec}\theta - \cot\theta}$ is: —

यदि $\frac{\sec\theta - \tan\theta}{\sec\theta + \tan\theta} = \frac{3}{5}$ है, तो $\frac{\operatorname{cosec}\theta + \cot\theta}{\operatorname{cosec}\theta - \cot\theta}$ का मान बताइए।

- a) $31+8\sqrt{15}$
 b) $33+4\sqrt{15}$
 c) $27+\sqrt{15}$
 d) $24+\sqrt{15}$

52. The given expression is equal to: $\frac{\sin^4 A + \cos^4 A}{1 - 2\sin^2 A \cos^2 A}$

दिया गया व्यंजक $\frac{\sin^4 A + \cos^4 A}{1 - 2\sin^2 A \cos^2 A}$ के बराबर है।

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

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53. If $\sin\theta \cos\theta = \frac{1}{\sqrt{5}}$ then the value of $(\sin^4\theta + \cos^4\theta)$

यदि $\sin\theta \cos\theta = \frac{1}{\sqrt{5}}$ है, तो $(\sin^4\theta + \cos^4\theta)$ का मान क्या है?

- (a) $\frac{5}{3}$
 (b) 1
 (c) 0.6
 (d) 0.4

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54. If $\sin\theta \cos\theta = \frac{\sqrt{2}}{3}$, then the value of $(\sin^6\theta + \cos^6\theta)$

यदि $\sin\theta \cos\theta = \frac{\sqrt{2}}{3}$, तो $(\sin^6\theta + \cos^6\theta)$ का मान क्या है?

- (a) $\frac{1}{3}$
 (b) $\frac{2}{3}$ (c) $\frac{5}{3}$ (d) $\frac{4}{3}$

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55. If $\sin\theta + \cos\theta = \frac{\sqrt{7}}{2}$, then what is $\sin^6\theta + \cos^6\theta + 6\sin^2\theta\cos^2\theta$ equal to?

यदि $\sin\theta + \cos\theta = \frac{\sqrt{7}}{2}$ है तो $\sin^6\theta + \cos^6\theta + 6\sin^2\theta\cos^2\theta$ किसके बराबर है?

- (a) $\frac{21}{16}$ (b) $\frac{103}{64}$ (c) 1 (d) $\frac{91}{64}$

56. In a triangle ABC, right angled at B, AB= 7 and (AC-BC)= 1cm. The value of (secA+cotC) is:

ΔABC में B पर समकोण है, AB=7cm और (AC-BC)=1cm है। (secA+cotC) का मान है:

- a) $\frac{4}{3}$ b) $\frac{3}{4}$ c) $\frac{175}{24}$ d) 7

57. In a right ΔABC , $\angle B=90^\circ$, AC-BC=2, AB=4 $\sqrt{2}$, Then secA+cotC?

- a) $2\sqrt{2}$ b) $4\sqrt{2}$ c) $3\sqrt{2}$ d) $5\sqrt{2}$

58. If $\sec x + \cos x = 3$, then $\tan^2 x - \sin^2 x = ?$

- a) 5 b) 13 c) 9 d) 4

59. If $\sin\theta + \operatorname{cosec}\theta = k$, then what is the value of $\cos^2\theta - \cot^2\theta$?

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

- (a) $3 - k^2$ (b) $4 - k^2$ (c) $k^2 - 4$ (d) $k^2 + 2$

60. If $\sin\theta + \operatorname{cosec}\theta = 7$, then what is the value of $\sin^3\theta + \operatorname{cosec}^3\theta$?

यदि $\sin\theta + \operatorname{cosec}\theta = 7$ है, तो $\sin^3\theta + \operatorname{cosec}^3\theta$ का मान ज्ञात कीजिए।

- (a) 350
(b) 382
(c) 322
(d) 367

61. If $\cos\theta + \sec\theta = \sqrt{3}$, then the value of $\cos^3\theta + \sec^3\theta$ is:

यदि $\cos\theta + \sec\theta = \sqrt{3}$, तो $\cos^3\theta + \sec^3\theta$ का मान ज्ञात कीजिए।

- (a) $\frac{1}{\sqrt{3}}$ (b) $2\sqrt{3}$ 0 (c) 0 (d) $\sqrt{3}$

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62. What is the simplified value of $\frac{\cot A + \tan B}{\cot B + \tan A} = ?$

- a) $\tan B \cot A$ b) $\tan A \cot B$
c) $\tan A \tan B$ d) $\cot A \cot B$

63. If $7\sin^2\theta + 4\cos^2\theta = 5$ and θ lies in the first quadrant, then what is the value of $\frac{\sqrt{3}\sec\theta + \tan\theta}{\sqrt{2}\cot\theta - \sqrt{3}\cos\theta}$?

यदि $7\sin^2\theta + 4\cos^2\theta = 5$ और θ पहले चतुर्थांश में स्थित है, तो $\frac{\sqrt{3}\sec\theta + \tan\theta}{\sqrt{2}\cot\theta - \sqrt{3}\cos\theta}$ का मान क्या है?

- (a) $2(1 + \sqrt{2})$ (b) $3\sqrt{2}$ (c) $2(\sqrt{2} - 1)$ (d) $4\sqrt{2}$

64. If $\frac{\sin^2\theta}{\tan^2\theta - \sin^2\theta} = 5$, θ is an acute angle, then the value of $\frac{24\sin^2\theta - 15\sec^2\theta}{6\operatorname{cosec}^2\theta - 7\cot^2\theta}$ is:

यदि $\frac{\sin^2\theta}{\tan^2\theta - \sin^2\theta} = 5$ है, θ न्यून कोण है, तो $\frac{24\sin^2\theta - 15\sec^2\theta}{6\operatorname{cosec}^2\theta - 7\cot^2\theta}$ का मान ज्ञात करें।

- (a) 2
(b) -14
(c) 14
(d) -2



65. If $\frac{\cos^2\theta}{\cot^2\theta+\sin^2\theta-1} = 3$, $0^\circ < \theta < 90^\circ$, then the value of $(\tan\theta + \operatorname{cosec}\theta)$ is:

यदि $\frac{\cos^2\theta}{\cot^2\theta+\sin^2\theta-1} = 3$ है, $0^\circ < \theta < 90^\circ$ है, तो $(\tan\theta + \operatorname{cosec}\theta)$ का मान ज्ञात करें।

- (a) $2\sqrt{3}$
- (b) $\frac{5\sqrt{3}}{3}$
- (c) $3\sqrt{3}$
- (d) $\frac{4\sqrt{3}}{3}$

66. If $3\cos\theta = 2\sin^2\theta$, $0^\circ < \theta < 90^\circ$, then what is the value of $(\tan^2\theta + \sec^2\theta - \operatorname{cosec}^2\theta)$?

यदि $3\cos\theta = 2\sin^2\theta$, $0^\circ < \theta < 90^\circ$ है, तो $(\tan^2\theta + \sec^2\theta - \operatorname{cosec}^2\theta)$ का मान ज्ञात करें।

- (a) $\frac{17}{3}$
- (b) $-\frac{7}{3}$
- (c) $-\frac{17}{3}$
- (d) $\frac{7}{3}$

67. If $5\sin^2\theta = 3(1 + \cos\theta)$, $0^\circ < \theta < 90^\circ$, then the value of $\operatorname{cosec}\theta + \cot\theta$ is:

यदि $5\sin^2\theta = 3(1 + \cos\theta)$, $0^\circ < \theta < 90^\circ$ है, तो $\operatorname{cosec}\theta + \cot\theta$ का मान ज्ञात करें।

- (a) $\sqrt{\frac{7}{3}}$
- (b) $\frac{5}{\sqrt{21}}$
- (c) $\frac{4}{\sqrt{21}}$
- (d) $\sqrt{\frac{3}{7}}$

68. Solve the following equation/निम्न समीकरण का मान ज्ञात करें।

$\theta : 2\sqrt{3} \sin^2\theta + \cos\theta - \sqrt{3} = 0$ where θ is an acute angle /जहाँ θ न्यून कोण है।

- (a) 30°
- (b) 45°
- (c) 60°
- (d) 15°



69. If $5\sin^2\theta + 14\cos\theta = 13$, $0^\circ < \theta < 90^\circ$, then what is the value of $\frac{\sec\theta + \cot\theta}{\cosec\theta + \tan\theta}$?

यदि $5\sin^2\theta + 14\cos\theta = 13$, $0^\circ < \theta < 90^\circ$ है, तो $\frac{\sec\theta + \cot\theta}{\cosec\theta + \tan\theta}$ का मान क्या होगा?

- a) $\frac{9}{8}$ b) $\frac{31}{29}$ c) $\frac{21}{28}$ d) $\frac{32}{27}$

70. If $2\sin\theta + 15\cos^2\theta = 7$, $0^\circ < \theta < 90^\circ$, then $\tan\theta + \cos\theta + \sec\theta = ?$

यदि $2\sin\theta + 15\cos^2\theta = 7$, $0^\circ < \theta < 90^\circ$ है, तो $\tan\theta + \cos\theta + \sec\theta$ का मान ज्ञात कीजिए।

- a) $3\frac{4}{5}$ b) 3 c) $3\frac{3}{5}$ d) 4

71. If $7\sin^2\theta - \cos^2\theta + 2\sin\theta = 2$, $0^\circ < \theta < 90^\circ$, then the value of $\frac{\sec 2\theta + \cot 2\theta}{\cosec 2\theta + \tan 2\theta}$ is?

यदि $7\sin^2\theta - \cos^2\theta + 2\sin\theta = 2$, $0^\circ < \theta < 90^\circ$ है, तो $\frac{\sec 2\theta + \cot 2\theta}{\cosec 2\theta + \tan 2\theta}$ का मान क्या है?

- a) $\frac{2\sqrt{3}+1}{3}$ b) 1 c) $\frac{1(1+2\sqrt{3})}{5}$ d) $\frac{2}{5}(1+\sqrt{3})$

72. If $3 - 2\sin^2\theta - 3\cos\theta = 0$, $0^\circ \leq \theta \leq 90^\circ$, then the value of $(2\cosec\theta + \tan\theta)$:

यदि $3 - 2\sin^2\theta - 3\cos\theta = 0$, $0^\circ \leq \theta \leq 90^\circ$ है तो $(2\cosec\theta + \tan\theta)$ का मान है:

- a) $7\sqrt{3}$ b) $5\sqrt{3}$ c) $\frac{5\sqrt{3}}{3}$ d) $\frac{7\sqrt{3}}{3}$

73. If $\frac{\sin^2\theta}{\cos^2\theta - 3\cos\theta + 2} = 1$, θ lies in the first quadrant, then the value of $\frac{\tan^2\frac{\theta}{2} + \sin^2\frac{\theta}{2}}{\tan\theta + \sin\theta}$

यदि $\frac{\sin^2\theta}{\cos^2\theta - 3\cos\theta + 2} = 1$, θ पहले चतुर्थांश में है, तो $\frac{\tan^2\frac{\theta}{2} + \sin^2\frac{\theta}{2}}{\tan\theta + \sin\theta}$ का मान है?

- a) $\frac{2\sqrt{3}}{27}$ b) $\frac{5\sqrt{3}}{27}$ c) $\frac{2\sqrt{3}}{9}$ d) $\frac{7\sqrt{3}}{54}$

74. If $4 - 6\cos^2\theta - \sin\theta = 0$, $0^\circ < \theta < 90^\circ$, then the value of $\cot\theta + \tan\theta$:

यदि $4 - 6\cos^2\theta - \sin\theta = 0$, $0^\circ < \theta < 90^\circ$, है, तो $\cot\theta + \tan\theta$ का मान है:

- a) $9\sqrt{2}/5$ b) $9/2\sqrt{5}$ c) $3\sqrt{2}/5$ d) $3/2\sqrt{5}$

75. If $8\cos^2\theta - 2\cos\theta - 3 = 0$, $0^\circ < \theta < 90^\circ$, then what is the value of $3\tan\theta + \cosec\theta + \cot\theta$?

यदि $8\cos^2\theta - 2\cos\theta - 3 = 0$, $0^\circ < \theta < 90^\circ$ है, तो $3\tan\theta + \cosec\theta + \cot\theta$ का मान क्या है?

- (a) $2\sqrt{7}$
 (b) $\frac{4}{3}\sqrt{7}$
 (c) $\frac{3}{4}\sqrt{7}$
 (d) $4\sqrt{7}$

76. If $11\sin^2\theta - \cos^2\theta + 4\sin\theta - 4 = 0$, $0^\circ < \theta < 90^\circ$, then what is the value of $\frac{\cot 2\theta + \cos 2\theta}{\sec 2\theta - \tan 2\theta}$?

यदि $11\sin^2\theta - \cos^2\theta + 4\sin\theta - 4 = 0$, $0^\circ < \theta < 90^\circ$, तो $\frac{\cot 2\theta + \cos 2\theta}{\sec 2\theta - \tan 2\theta}$ का मान क्या है?

- a) $\frac{12+7\sqrt{3}}{6}$ b) $\frac{12+5\sqrt{3}}{3}$ c) $\frac{10+5\sqrt{3}}{3}$ d) $\frac{10+7\sqrt{3}}{6}$

77. If θ is an acute angle and $\sin\theta\cos\theta = 2\cos^3\theta - \frac{1}{4}\cos\theta$, then the value of $\sin\theta$ is?

यदि θ एक न्यूनकोण है और $\sin\theta\cos\theta = 2\cos^3\theta - \frac{1}{4}\cos\theta$ है, तो $\sin\theta$ का मान क्या है?

- A) $\frac{\sqrt{15}-1}{8}$
 B) $\frac{\sqrt{15}+1}{4}$
 C) $\frac{\sqrt{15}-1}{4}$
 D) $\frac{\sqrt{15}-1}{2}$



78. If $\frac{1}{1+\tan\theta} + \frac{1}{1-\tan\theta} = 4$, $0^\circ < \theta < 90^\circ$, then what is the value of $\cosec\theta + \sec\theta + \sin\theta$?

यदि $\frac{1}{1+\tan\theta} + \frac{1}{1-\tan\theta} = 4$, $0^\circ < \theta < 90^\circ$, तो $\cosec\theta + \sec\theta + \sin\theta$ का मान क्या है?

(a) $\frac{3+4\sqrt{2}}{\sqrt{6}}$

(b) $\frac{8\sqrt{3}}{3}$

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

(d) $\frac{4+3\sqrt{2}}{\sqrt{6}}$

79. If $\tan^2\theta - 3\sec\theta + 3 = 0$, $0^\circ < \theta < 90^\circ$, then the value of $\sin\theta + \cot\theta$ is:

यदि $\tan^2\theta - 3\sec\theta + 3 = 0$, $0^\circ < \theta < 90^\circ$ है, तो $\sin\theta + \cot\theta$ का मान होगा—

a) $\frac{5\sqrt{3}}{6}$ b) $2\sqrt{3}$ c) $\frac{5\sqrt{3}}{3}$ d) $3\sqrt{3}$

80. If $\tan\theta - \cot\theta = \cosec\theta$ $0^\circ < \theta < 90^\circ$, then what is the value of $\frac{2\tan\theta - \cos\theta}{\sqrt{3}\cot\theta + \sec\theta}$?

यदि $\tan\theta - \cot\theta = \cosec\theta$ $0^\circ < \theta < 90^\circ$, तो $\frac{2\tan\theta - \cos\theta}{\sqrt{3}\cot\theta + \sec\theta}$ का मान क्या है?

a) $\frac{2(2\sqrt{3}-1)}{3}$ b) $\frac{4\sqrt{3}-1}{6}$ c) $\frac{3\sqrt{3}-1}{6}$ d) $\frac{2\sqrt{3}-1}{6}$

81. For $\theta : 0^\circ < \theta < 90^\circ$

$3\sec\theta + 4\cos\theta = 4\sqrt{3}$, find the value of $(1-\sin\theta + \cos\theta)$.

θ के लिए : $0^\circ < \theta < 90^\circ$ है।

$3\sec\theta + 4\cos\theta = 4\sqrt{3}$, है, तो $(1-\sin\theta + \cos\theta)$ का मान ज्ञात करें।

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

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

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

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

82. Find the value of θ , if $\sec^2\theta + (1 - \sqrt{3})\tan\theta - (1 + \sqrt{3}) = 0$, where θ is an acute angle.

ठीक मान ज्ञात करें, यदि $\sec^2\theta + (1 - \sqrt{3})\tan\theta - (1 + \sqrt{3}) = 0$, जहाँ θ अन्यून कोण है।

(a) 60°

(b) 30°

(c) 45°

(d) 15°

83. If $12\cot^2\theta - 31\cosec\theta + 32 = 0$, $0^\circ < \theta < 90^\circ$, then the values of $\sin\theta$ will be:

यदि $12\cot^2\theta - 31\cosec\theta + 32 = 0$, $0^\circ < \theta < 90^\circ$ है तो $\sin\theta$ का मान होगा?



a) $\frac{5}{4}, \frac{4}{3}$ b) $\frac{2}{3}, \frac{1}{4}$ c) $\frac{4}{5}, \frac{3}{4}$ d) $\frac{1}{3}, \frac{3}{2}$

84. What is the value of $\sin\theta + \cos\theta$, if θ satisfies the equation

$$\cot^2\theta - (\sqrt{3} + 1)\cot\theta + \sqrt{3} = 0; 0 < \theta < \frac{\pi}{4}$$

यदि θ समीकरण $\cot^2\theta - (\sqrt{3} + 1)\cot\theta + \sqrt{3} = 0; 0 < \theta < \frac{\pi}{4}$ को संतुष्ट करता है, तो $\sin\theta + \cos\theta$ का मान क्या है? (CDS 2023)

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

85. If $6\tan\theta - 5\sqrt{3}\sec\theta + 12\cot\theta = 0, 0^\circ < \theta < 90^\circ$, then the value of $(\cosec\theta + \sec\theta)$ is

यदि $6\tan\theta - 5\sqrt{3}\sec\theta + 12\cot\theta = 0, 0^\circ < \theta < 90^\circ$ है, तो $(\cosec\theta + \sec\theta)$ का मान ज्ञात कीजिए।

(A) $\frac{3+2\sqrt{3}}{2}$ (B) $\frac{3+\sqrt{3}}{2}$
 (C) $\frac{2(3+2\sqrt{3})}{3}$ (D) $\frac{2}{3}(3 + \sqrt{3})$

86. Which of the following is/are identity/identities?

निम्नलिखित में से कौन सी सर्वसमिका /सर्वसमिकाएँ हैं/हैं?

- I. $\frac{\sin^3\theta + \cos^3\theta}{\sin\theta + \cos\theta} + \sin\theta \cos\theta = 1; 0 < \theta < \frac{\pi}{2}$
 II. $1 - \sin^6\theta = \cos^2\theta(\cos^4\theta + 3\sin^2\theta)$

Select the correct answer using the code given below:-

नीचे दिए गए कोड का उपयोग करके सही उत्तर चुनें:- (CDS 2023)

- A) I only
- B) II only
- C) Both I and II
- D) Neither I nor II

87. If $7\sin^4\theta + 9\cos^4\theta + 42\sin^2\theta = 16, 0 < \theta < \frac{\pi}{2}$, then find $\tan\theta$?

यदि $7\sin^4\theta + 9\cos^4\theta + 42\sin^2\theta = 16, 0 < \theta < \frac{\pi}{2}$, तो $\tan\theta$ ज्ञात करें? (CDS 2023)

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

88. If $\cot\theta = \frac{4}{3}, 0 < \theta < \frac{\pi}{2}$ & $5p\cos^2\theta \sin\theta = \cot^2\theta$, then find the value of p?

यदि $\cot\theta = \frac{4}{3}, 0 < \theta < \frac{\pi}{2}$ & $5p\cos^2\theta \sin\theta = \cot^2\theta$, तो p का मान ज्ञात कीजिए? (CPO 2023)

- A) $7/27$
- B) $5/27$
- C) $25/27$
- D) $125/27$

89. If $\frac{\cos\theta}{1-\sin\theta} + \frac{\cos\theta}{1+\sin\theta} = 4, 0^\circ < \theta < 90^\circ$, then the value of $(\tan\theta + \cosec\theta)$ is:

यदि $\frac{\cos\theta}{1-\sin\theta} + \frac{\cos\theta}{1+\sin\theta} = 4, 0^\circ < \theta < 90^\circ$ है, तो $(\tan\theta + \cosec\theta)$ का मान होगा—

(a) $5\frac{\sqrt{2}}{2}$ (b) $5\frac{\sqrt{3}}{3}$ (c) $4\frac{\sqrt{3}}{3}$ (d) $5\frac{\sqrt{2}}{3}$



90. If $\frac{\sin\theta}{1+\cos\theta} + \frac{1+\cos\theta}{\sin\theta} = \frac{4}{\sqrt{3}}$, $0^\circ < \theta < 90^\circ$, then the value of $(\tan\theta + \sec\theta)^{-1}$ is :

यदि $\frac{\sin\theta}{1+\cos\theta} + \frac{1+\cos\theta}{\sin\theta} = \frac{4}{\sqrt{3}}$, $0^\circ < \theta < 90^\circ$, तो $(\tan\theta + \sec\theta)^{-1}$ का मान है :

- a) $2 + \sqrt{3}$ b) $2 - \sqrt{3}$ c) $3 - \sqrt{2}$ d) $3 + \sqrt{2}$

91. If $(\frac{1}{1+\cosec\theta} - \frac{1}{1-\cosec\theta}) \cos\theta = 2$, $0^\circ < \theta < 90^\circ$, then the value of $\sin^2\theta + \cot^2\theta + \sec^2\theta$ is:

यदि $(\frac{1}{1+\cosec\theta} - \frac{1}{1-\cosec\theta}) \cos\theta = 2$, $0^\circ < \theta < 90^\circ$ है, तो $\sin^2\theta + \cot^2\theta + \sec^2\theta$ का मान है:

- a) 1 b) $2\frac{1}{2}$ c) $3\frac{1}{2}$ d) 2

92. If $(\cos^2\theta - 1)(2\sec^2\theta) + \sec^2\theta + 2\tan^2\theta = 2$, $0^\circ < \theta < 90^\circ$, then the value of

$\frac{(\sec\theta + \sin\theta)}{(\cosec\theta - \cos\theta)}$ will be:

यदि $(\cos^2\theta - 1)(2\sec^2\theta) + \sec^2\theta + 2\tan^2\theta = 2$, $0^\circ < \theta < 90^\circ$ है, तो $\frac{(\sec\theta + \sin\theta)}{(\cosec\theta - \cos\theta)}$ का मान ज्ञात करें।

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

93. The value of $\frac{32}{\sec^2\theta} - \frac{20}{1+\tan^2\theta} + 12\sin^2\theta$ is:

$\frac{32}{\sec^2\theta} - \frac{20}{1+\tan^2\theta} + 12\sin^2\theta$ का मान है:

1. 20 2. 32

3. 24

4. 12

(SSC SELECTION POST XI 2023)

94. $\frac{6}{1+\tan^2\alpha} + \frac{2}{1+\cot^2\alpha} + 4\sin^2\alpha - 1 = ?$

- a) 2 b) 3 c) 4 d) 5

3. 24

4. 12

95. Simplify $\sec^2\alpha \left(1 + \frac{1}{\cosec\alpha}\right) \left(1 - \frac{1}{\cosec\alpha}\right)$.

$\sec^2\alpha \left(1 + \frac{1}{\cosec\alpha}\right) \left(1 - \frac{1}{\cosec\alpha}\right)$ का मान ज्ञात करें।

- (a) $\tan^4\alpha$
(b) -1
(c) 1
(d) $\sin^2\alpha$

96.

The value of $(1 + \sin^4 A - \cos^4 A) \cosec^2 A$ is:

$(1 + \sin^4 A - \cos^4 A) \cosec^2 A$ का मान क्या होगा?

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

(SSC CPO 2023)

97. $\left(\frac{1}{\cos\theta} - \frac{1}{\sin\theta}\right) + \frac{1}{\cosec\theta - \cot\theta} - \frac{1}{\sec\theta + \tan\theta} = ?$

- (a) $\sec\theta \cosec\theta$ (b) $\sin\theta \tan\theta$
(c) $\cosec\theta \cot\theta$ (d) $\sin\theta \cos\theta$

98. A simplified value of $\left(\frac{\sin\theta}{1+\cos\theta} + \frac{1+\cos\theta}{\sin\theta}\right) \left(\frac{1}{\tan\theta + \cot\theta}\right)$ is:



$\left(\frac{\sin\theta}{1+\cos\theta} + \frac{1+\cos\theta}{\sin\theta}\right) \left(\frac{1}{\tan\theta+\cot\theta}\right)$ का सरलीकृत मान है:

- a) $\cos\theta$ b) $2\sin\theta$ c) $\sin\theta$ d) $2\cos\theta$

99. The value of $\frac{(\sin\theta - \cos\theta)(1 + \tan\theta + \cot\theta)}{1 + \sin\theta\cos\theta}$ = ?

$\frac{(\sin\theta - \cos\theta)(1 + \tan\theta + \cot\theta)}{1 + \sin\theta\cos\theta}$ का मान है :

- a) $\sec\theta - \cosec\theta$ b) $\cosec\theta - \sec\theta$
c) $\sin\theta + \cos\theta$ d) $\tan\theta - \cot\theta$

100. If $\frac{(\sin\theta - \cosec\theta)(\cos\theta - \sec\theta)}{\tan^2\theta - \sin^2\theta} = r^3$, then $r = ?$

यदि $\frac{(\sin\theta - \cosec\theta)(\cos\theta - \sec\theta)}{\tan^2\theta - \sin^2\theta} = r^3$ है तो r बराबर है:

- a) $\sin\theta\cos\theta$ b) $\tan\theta$ c) $\cot\theta$ d) $\cosec\theta\sec\theta$

101. Simplify the given expression. $\sqrt{\frac{1 + \cos P}{1 - \cos P}}$

दिए गए व्यंजक को सरल कीजिए।

$$\sqrt{\frac{1 + \cos P}{1 - \cos P}}$$

- (a) $\cosec P + \cot P$ (b) $\tan P + \tan P$
(c) $\sec P - \tan P$ (d) $\cosec P - \cot P$

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102. If $(1 + \tan^2\theta) + (1 + (\tan^2\theta)^{-1}) = k$, then $\sqrt{k} = ?$

यदि $(1 + \tan^2\theta) + (1 + (\tan^2\theta)^{-1}) = k$ है, तो $\sqrt{k} = ?$

- (a) $\cosec\theta \sec\theta$ (b) $\cosec\theta \cos\theta$
(c) $\sin\theta \cos\theta$ (d) $\sin\theta \sec\theta$

103. The value of $\tan^2\theta + \cot^2\theta - \sec^2\theta \cosec^2\theta$ is equal to:

$\tan^2\theta + \cot^2\theta - \sec^2\theta \cosec^2\theta$ का मान बराबर है :

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

104.

The value of $\frac{\sec^2\theta}{\cosec^2\theta} + \frac{\cosec^2\theta}{\sec^2\theta} - (\sec^2\theta + \cosec^2\theta)$ is:

$\frac{\sec^2\theta}{\cosec^2\theta} + \frac{\cosec^2\theta}{\sec^2\theta} - (\sec^2\theta + \cosec^2\theta)$ का मान बराबर है:

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

105. If $0^\circ < \theta < 90^\circ$, $\sqrt{\frac{\sec^2\theta + \cosec^2\theta}{\tan^2\theta - \sin^2\theta}}$ is equal to:

यदि $0^\circ < \theta < 90^\circ$ है, तो $\sqrt{\frac{\sec^2\theta + \cosec^2\theta}{\tan^2\theta - \sin^2\theta}}$ का मान ज्ञात करें।

- (a) $\sec^3\theta$
(b) $\sin^2\theta$
(c) $\cosec^3\theta$
(d) $\sec^2\theta$

106. The value of $\frac{\sec\theta \cosec\theta}{2 + \tan^2\theta + \cot^2\theta}$ is equal to:



$\frac{\sec \theta \cosec \theta}{2 + \tan^2 \theta + \cot^2 \theta}$ का मान ज्ञात करें।

- (a) $\sec \theta \cosec \theta$
- (b) $\sec \theta \sin \theta$
- (c) $\sin \theta \cos \theta$
- (d) $\cos \theta \cosec \theta$

107. $\frac{1 + \cos \theta - \sin^2 \theta}{\sin \theta (1 + \cos \theta)} \times \frac{\sqrt{\sec^2 \theta + \cosec^2 \theta}}{\tan \theta + \cot \theta}, 0^\circ < \theta < 90^\circ$, is equal to:

$$\frac{1 + \cos \theta - \sin^2 \theta}{\sin \theta (1 + \cos \theta)} \times \frac{\sqrt{\sec^2 \theta + \cosec^2 \theta}}{\tan \theta + \cot \theta} = ?, 0^\circ < \theta < 90^\circ$$

- (a) $\tan \theta$
- (b) $\sec \theta$
- (c) $\cosec \theta$
- (d) $\cot \theta$

108. What will be the value of $\cos x \cosec x - \sin x \sec x$?

$\cos x \cosec x - \sin x \sec x$ का मान क्या होगा?

- A) $\cot^2 x$
- B) $\tan 2x$
- C) $\cot 2x$
- D) $2 \cot 2x$

109. Evaluate: $8 \sec^2 45^\circ + 20 \sin^2 30^\circ + 15 \tan 45^\circ$

$8 \sec^2 45^\circ + 20 \sin^2 30^\circ + 15 \tan 45^\circ$ का मान ज्ञात कीजिए।

- (a) 43 (b) 28
- (c) 36 (d) 42

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110. If $\cos \theta = \frac{\sqrt{3}}{2}$, then the value of $\frac{2 - \sin^2 \theta}{1 - \cot^2 \theta} + (\sec^2 \theta + \cosec \theta)$ is:

यदि $\cos \theta = \frac{\sqrt{3}}{2}$ है, तो $\frac{2 - \sin^2 \theta}{1 - \cot^2 \theta} + (\sec^2 \theta + \cosec \theta)$ का मान ज्ञात करें।

- (a) $\frac{25}{12}$
- (b) $\frac{59}{24}$
- (c) $-\frac{25}{12}$
- (d) $-\frac{59}{24}$

111. The value of $\frac{4 \tan^2 30^\circ + \frac{1}{4} \sin^2 90^\circ + \frac{1}{8} \cot^2 60^\circ + \sin^2 30^\circ \cos^2 45^\circ}{\sin 60^\circ \cos 30^\circ - \cos 60^\circ \sin 30^\circ}$ is :

$\frac{4 \tan^2 30^\circ + \frac{1}{4} \sin^2 90^\circ + \frac{1}{8} \cot^2 60^\circ + \sin^2 30^\circ \cos^2 45^\circ}{\sin 60^\circ \cos 30^\circ - \cos 60^\circ \sin 30^\circ}$ का मान है:

- a) $1\frac{3}{4}$
- b) 4
- c) $2\frac{1}{2}$
- d) $3\frac{1}{2}$

112. The value of $\frac{\cosec^2 30^\circ \sin^2 45^\circ + \sec^2 60^\circ}{\tan 60^\circ \cosec 245^\circ - \sec^2 60^\circ \tan 45^\circ}$ is:



$\frac{\operatorname{cosec}^2 30^\circ \sin^2 45^\circ + \sec^2 60^\circ}{\tan 60^\circ \operatorname{cosec}^2 45^\circ - \sec^2 60^\circ \tan 45^\circ}$ का मान ज्ञात कीजिए।

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

113. Find the value of $\frac{\tan^2 30^\circ}{\sec^2 30^\circ} + \frac{\operatorname{cosec}^2 45^\circ}{\cot^2 45^\circ} - \frac{\sec^2 60^\circ}{\operatorname{cosec}^2 60^\circ}$.

$\frac{\tan^2 30^\circ}{\sec^2 30^\circ} + \frac{\operatorname{cosec}^2 45^\circ}{\cot^2 45^\circ} - \frac{\sec^2 60^\circ}{\operatorname{cosec}^2 60^\circ}$ का मान ज्ञात करें।

- (a) $-\frac{3}{4}$
 (b) $\frac{5}{4}$
 (c) $\frac{13}{4}$
 (d) $\frac{23}{12}$

114. The value of $\frac{\tan^2 30^\circ + \sin^2 90^\circ + \cot^2 60^\circ + \sin^2 30^\circ \cos^2 45^\circ}{\sin 60^\circ \cos 30^\circ - \cos 60^\circ \sin 30^\circ}$ is:

$\frac{\tan^2 30^\circ + \sin^2 90^\circ + \cot^2 60^\circ + \sin^2 30^\circ \cos^2 45^\circ}{\sin 60^\circ \cos 30^\circ - \cos 60^\circ \sin 30^\circ}$ का मान ज्ञात करें।

- (a) $\frac{25}{12}$
 (b) $\frac{43}{12}$
 (c) $\frac{37}{12}$
 (d) $\frac{47}{12}$

115. What number should be subtracted from

$4(\sin^4 60^\circ + \cos^4 30^\circ) - (\tan^2 45^\circ - \cot^2 30^\circ) + \cos^2 45^\circ - \operatorname{cosec}^2 45^\circ + \sec^2 60^\circ$ to get 2?

2 प्राप्त करने के लिए किस संख्या को $4(\sin^4 60^\circ + \cos^4 30^\circ) - (\tan^2 45^\circ - \cot^2 30^\circ) + \cos^2 45^\circ - \operatorname{cosec}^2 45^\circ + \sec^2 60^\circ$ से घटाया जाना चाहिए?

- (a) 5
 (b) 4
 (c) 7
 (d) 3

116. If $\frac{k - k \cot^2 30^\circ}{1 + \cot^2 30^\circ} = \sin^2 60^\circ + 4 \tan^2 45^\circ - \operatorname{cosec}^2 60^\circ$, then the value of k (correct to two decimal places) is?

यदि $\frac{k - k \cot^2 30^\circ}{1 + \cot^2 30^\circ} = \sin^2 60^\circ + 4 \tan^2 45^\circ - \operatorname{cosec}^2 60^\circ$ है, तो k का मान (दो दशमलव स्थानों तक सही) है?

- A) 5.55
 B) -6.83
 C) -5.58
 D) 6.83



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117. The value of $m[\sin\theta + 2\cos^2\theta + 3\sin\theta + 4\cos^2\theta + \dots + 18\cos^2\theta]$ is a perfect square of an integer, $\theta = 30^\circ$, $\theta = 45^\circ$ and $150 \leq m \leq 180$. Find the value of m .

यदि $m[\sin\theta + 2\cos^2\theta + 3\sin\theta + 4\cos^2\theta + \dots + 18\cos^2\theta]$ का मान एक पूर्णांक का एक पूर्ण वर्ग है, $\theta = 30^\circ$, $\theta = 45^\circ$ और $150 \leq m \leq 180$, तो m का मान ज्ञात करें।

- (a) 161
- (b) 152
- (c) 168
- (d) 176

118. If A is an acute angle, the simplified form of

$$\frac{\cos(\pi-A)\cot\left(\frac{\pi}{2}+A\right)\cos(-A)}{\tan(\pi+A)\tan\left(\frac{3\pi}{2}+A\right)\sin(2\pi-A)}$$

यदि A एक न्यून कोण है, तो निम्न का सरलीकृत रूप क्या होगा?

- (a) $\cos^2 A$
- (b) $\sin A$
- (c) $\sin^2 A$
- (d) $\cos A$

119. $\frac{4}{3}\cot^2\frac{\pi}{6} + 3\cos^2 150^\circ - 4\operatorname{cosec}^2 45^\circ + 8\sin\frac{\pi}{2}$
 a) $\frac{25}{4}$ b) $\frac{13}{2}$ c) -1 d) $-\frac{7}{2}$

120. $\sin(630+A) + \cos A$?

- a) $\frac{\sqrt{3}}{2}$
- b) $\frac{1}{2}$
- c) 0
- d) 1

121. If A is an acute angle, then the simplified form of $\frac{\cos(\pi-A)\cot\left(\frac{\pi}{2}+A\right)\cos(-A)}{\tan(\pi+A)\tan\left(\frac{3\pi}{2}+A\right)\sin(2\pi-A)}$ is?

यदि A एक न्यून कोण है, तो इसका $\frac{\cos(\pi-A)\cot\left(\frac{\pi}{2}+A\right)\cos(-A)}{\tan(\pi+A)\tan\left(\frac{3\pi}{2}+A\right)\sin(2\pi-A)}$ सरलीकृत रूप (है)?

- A) $\cos^2 A$
- B) $\sin A$
- C) $\sin^2 A$
- D) $\cos A$

122. $\operatorname{cosec} 2910^\circ + \sec 4260^\circ + \tan 2565^\circ + \cot 1755^\circ = ?$

- A) 3
- B) 1
- C) 4
- D) 0

123. $\tan 4384^\circ + \cot 6814^\circ = ?$

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



124. Find the value of $\cos 47^\circ \sec 133^\circ + \sin 144^\circ \operatorname{cosec} 136^\circ$.

$\cos 47^\circ \sec 133^\circ + \sin 144^\circ \operatorname{cosec} 136^\circ$ का मान ज्ञात कीजिए।

(a) $1/2$ (b) 1

(c) 0

(d) -1

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125. If $\tan 40^\circ = \alpha$, then find $\frac{\tan 320^\circ - \tan 310^\circ}{1 + \tan 320^\circ \cdot \tan 310^\circ}$?

यदि $\tan 40^\circ = \alpha$ है, तो $\frac{\tan 320^\circ - \tan 310^\circ}{1 + \tan 320^\circ \cdot \tan 310^\circ}$ का मान ज्ञात कीजिए?

A) $\frac{1-\alpha^2}{\alpha}$

B) $\frac{1+\alpha^2}{2\alpha}$

C) $\frac{1-\alpha^2}{2\alpha}$

D) $\frac{1+\alpha^2}{\alpha}$

126. If A lies between 45° and 540° , and $\sin A = 0.5$, what is the value of $A/3$ in degrees?

यदि A का मान 45° और 540° के मध्य है, और $\sin A = 0.5$ है, तो A/3 का मान अंश में कितना होगा?

(a) 170°

(b) 175°

(c) 165°

(d) 160°

127. If $\cos 27^\circ = x$, then the value of $\tan 63^\circ$ is:

यदि $\cos 27^\circ = x$ है, तो $\tan 63^\circ$ का मान है:

(a) $\frac{\sqrt{1+x^2}}{x}$

(b) $\frac{x}{\sqrt{1+x^2}}$

(c) $\frac{\sqrt{1+x^2}}{x}$

(d) $\frac{x}{\sqrt{1-x^2}}$

128. $\frac{2 \sin 22^\circ}{\cos 68^\circ} - \frac{2 \cot 75^\circ}{5 \tan 15^\circ} - \frac{8 \tan 45^\circ \tan 20^\circ \tan 40^\circ \tan 50^\circ \tan 70^\circ}{5}$

निम्नलिखित को हल करें।

$$\frac{2 \sin 22^\circ}{\cos 68^\circ} - \frac{2 \cot 75^\circ}{5 \tan 15^\circ} - \frac{8 \tan 45^\circ \tan 20^\circ \tan 40^\circ \tan 50^\circ \tan 70^\circ}{5}$$

(A) 2

(B) 1

(C) 3

(D) 0

129. If A, B and C be the angles of a triangle, then out of the following, the incorrect relation is:

a) $\cos \frac{A+B}{2} = \sin \frac{C}{2}$ b) $\tan \frac{A+B}{2} = \sec \frac{C}{2}$

c) $\cot \frac{A+B}{2} = \tan \frac{C}{2}$ d) $\sin \frac{A+B}{2} = \cos \frac{C}{2}$

130. The value of the expression $\cos^2 45^\circ + \cos^2 135^\circ + \cos^2 225^\circ + \cos^2 315^\circ$ is:

व्यंजक $\cos^2 45^\circ + \cos^2 135^\circ + \cos^2 225^\circ + \cos^2 315^\circ$ का मान है—

(a) 2

(b) 1/2

(c) 3/2

(d) 1

131. If $\cos 48^\circ = \frac{m}{n}$, then $\sec 48^\circ - \cot 42^\circ$ is equal to:

यदि $\cos 48^\circ = \frac{m}{n}$ है, तो $\sec 48^\circ - \cot 42^\circ$ _____ के बराबर है।



(a) $\frac{m-\sqrt{n^2-m^2}}{m}$

(b) $\frac{m-\sqrt{n^2-m^2}}{n}$

(c) $\frac{n-\sqrt{n^2-m^2}}{n}$

(d) $\frac{n-\sqrt{n^2-m^2}}{m}$

132. $\cos 19^\circ = \frac{a}{b}$ then $\cos e c 19^\circ - \cos 71^\circ = ?$

a) $\frac{b^2}{a\sqrt{a^2-b^2}}$ b) $\frac{a^2}{b\sqrt{b^2-a^2}}$ c) $\frac{a^2b^2}{\sqrt{a^2-b^2}}$ d) $\frac{ab}{\sqrt{b^2-a^2}}$

133. ΔPQR is a right angled triangle. $\angle Q = 90$ degree, $PQ = 12$ cm, $QR = 5$ cm.

What is the value of $\cot P - \tan R$?

ΔPQR एक समकोण त्रिभुज है। $\angle Q = 90$ डिग्री, $PQ = 12$ cm, $QR = 5$ cm है। $\cot P - \tan R$ का मान क्या है?

- (a) 5/24
- (b) 5/6
- (c) 5/13
- (d) 0

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134. Triangle ABC is a right-angle triangle at B. If $\tan A = \frac{5}{12}$, then $\sin A + \sin B + \sin C$ will be equal to?

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

- A) $2\frac{1}{13}$
- B) $1\frac{5}{13}$
- C) $3\frac{1}{13}$
- D) $2\frac{4}{13}$

135. In ΔABC , right angled at B, if $\tan A = \frac{1}{2}$, then the value of $\frac{\sin A(\cos C + \cos A)}{\cos C(\sin C - \sin A)}$ is:

ΔABC में, जो B पर समकोण है, यदि $\tan A = \frac{1}{2}$ है, तो $\frac{\sin A(\cos C + \cos A)}{\cos C(\sin C - \sin A)}$ का मान ज्ञात कीजिए।

- (a) $2\sqrt{5}$
- (b) 3
- (c) 2
- (d) 1

136. In ΔPQR , $\angle Q = 90$. If $\tan R = \frac{1}{3}$, then what is the value of $\frac{\sec P(\cos R + \sin P)}{\cosec R(\sin R - \cosec P)}$?

ΔPQR में, $\angle Q = 90$ है। यदि $\tan R = \frac{1}{3}$ है, तो $\frac{\sec P(\cos R + \sin P)}{\cosec R(\sin R - \cosec P)}$ का मान ज्ञात करें।

- (a) $-\frac{2}{7}$
- (b) $\frac{18}{7}$
- (c) $\frac{2}{7}$
- (d) $-\frac{18}{7}$

137. What is the value of $\frac{4}{3} (\sin^2 35^\circ + \sin^2 55^\circ)$?



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$\frac{4}{3} (\sin^2 35^\circ + \sin^2 55^\circ)$ का मान क्या है?

- (a) 8/9
 (b) 4/3
 (c) 3/4
 (d) 2/3

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138. What is the value of $\frac{3\operatorname{cosec}42^\circ}{\sec 48^\circ} - \frac{5\cos 32^\circ}{\sin 58^\circ}$

$\frac{3\operatorname{cosec}42^\circ}{\sec 48^\circ} - \frac{5\cos 32^\circ}{\sin 58^\circ}$ का मान क्या है?

- (a) -1
 (b) 5
 (c) 0
 (d) -2

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139. What is the value of $\frac{5}{2} \left\{ \frac{\cos 37^\circ}{\sin 53^\circ} \right\} - \frac{1}{2} (\sin^2 39^\circ + \sin^2 51^\circ)$?

$\frac{5}{2} \left\{ \frac{\cos 37^\circ}{\sin 53^\circ} \right\} - \frac{1}{2} (\sin^2 39^\circ + \sin^2 51^\circ)$ का मान क्या है?

- (a) $\sin^2 51^\circ - \sin 53^\circ$
 (b) $\sin 53^\circ + \tan 51^\circ$
 (c) 2
 (d) 1

140. The value of $\frac{\sin^2 52^\circ + 2 + \sin^2 38^\circ}{4\cos^2 43^\circ - 5 + 4\cos^2 47^\circ}$ is:

$\frac{\sin^2 52^\circ + 2 + \sin^2 38^\circ}{4\cos^2 43^\circ - 5 + 4\cos^2 47^\circ}$ का मान ज्ञात करें।

- (a) 3
 (b) $\frac{1}{3}$
 (c) $-\frac{1}{3}$
 (d) -3

141.

Find the value of $\frac{\cos 65^\circ}{\sin 25^\circ} + \frac{5 \sin 19}{\cos 71^\circ} - \frac{3 \cos 28^\circ}{\sin 62^\circ}$

$\frac{\cos 65^\circ}{\sin 25^\circ} + \frac{5 \sin 19}{\cos 71^\circ} - \frac{3 \cos 28^\circ}{\sin 62^\circ}$ का मान ज्ञात कीजिए।

- (a) 3
 (b) 2
 (c) 1
 (d) 0

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142. The value of $\left[\frac{\sin^2 27^\circ + \sin^2 63^\circ}{\cos^2 24^\circ + \cos^2 66^\circ} - \sin^2 69^\circ - \cos 69^\circ \sin 21^\circ \right]$ is:

$\left[\frac{\sin^2 27^\circ + \sin^2 63^\circ}{\cos^2 24^\circ + \cos^2 66^\circ} - \sin^2 69^\circ - \cos 69^\circ \sin 21^\circ \right]$ का मान ज्ञात करें।

- (a) 3
 (b) 2
 (c) 0



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(d) 1

143. The value of $\frac{3\cos^2 27^\circ - 5 + 3\cos^2 63^\circ}{\tan^2 32^\circ + 4 - \operatorname{cosec}^2 58^\circ} + \sin 35^\circ \cos 55^\circ + \cos 35^\circ \sin 55^\circ$ is:

$\frac{3\cos^2 27^\circ - 5 + 3\cos^2 63^\circ}{\tan^2 32^\circ + 4 - \operatorname{cosec}^2 58^\circ} + \sin 35^\circ \cos 55^\circ + \cos 35^\circ \sin 55^\circ$ का मान ज्ञात करें।

(a) $-\frac{1}{4}$

(b) $-\frac{1}{3}$

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

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

144. What is the value of $\frac{\tan^2 60^\circ - 2 \sin^2 45^\circ}{\cos 24^\circ \cos 37^\circ \cos ec 53^\circ \cos 60^\circ \cos ec 66^\circ + \sin^2 60^\circ}$

$\frac{\tan^2 60^\circ - 2 \sin^2 45^\circ}{\cos 24^\circ \cos 37^\circ \cos ec 53^\circ \cos 60^\circ \cos ec 66^\circ + \sin^2 60^\circ}$ का मान ज्ञात करें।

(a) $1\frac{4}{5}$

(b) 1

(c) 2

(d) $1\frac{3}{5}$

145. What is the value of $\frac{\sin 33^\circ \cos 57^\circ + \sec 62^\circ \sin 28^\circ + \cos 33^\circ \sin 57^\circ + \cos ec 62^\circ \cos 28^\circ}{\tan 15^\circ \tan 35^\circ \tan 60^\circ \tan 55^\circ \tan 75^\circ}$?

$\frac{\sin 33^\circ \cos 57^\circ + \sec 62^\circ \sin 28^\circ + \cos 33^\circ \sin 57^\circ + \cos ec 62^\circ \cos 28^\circ}{\tan 15^\circ \tan 35^\circ \tan 60^\circ \tan 55^\circ \tan 75^\circ}$ का मान ज्ञात करें।

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

(b) 2

(c) $2\sqrt{3}$

(d) $\sqrt{3}$

146. Find the value of $2\operatorname{cosec}^2 23^\circ \cot^2 67^\circ - \sin^2 23^\circ - \sin^2 67^\circ - \cot^2 67^\circ$.

$2\operatorname{cosec}^2 23^\circ \cot^2 67^\circ - \sin^2 23^\circ - \sin^2 67^\circ - \cot^2 67^\circ$ का मान ज्ञात कीजिए।

(a) $\sec^2 23^\circ$

(b) 1

(c) $\tan^2 23^\circ$

(d) 0

147. The value of $\tan^2 48^\circ - \operatorname{cosec}^2 42^\circ + \operatorname{cosec}(67^\circ + \theta) - \sec(23^\circ - \theta)$ is:

$\tan^2 48^\circ - \operatorname{cosec}^2 42^\circ + \operatorname{cosec}(67^\circ + \theta) - \sec(23^\circ - \theta)$ का मान ज्ञात कीजिए।

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



148. The value of $\operatorname{cosec}(58^\circ + \theta) - \sec(32^\circ - \theta) + \sin 15^\circ \sin 35^\circ \sec 55^\circ \sin 30^\circ \sec 75^\circ$ is:

$\operatorname{cosec}(58^\circ + \theta) - \sec(32^\circ - \theta) + \sin 15^\circ \sin 35^\circ \sec 55^\circ \sin 30^\circ \sec 75^\circ$ का मान ज्ञात करें।

- (a) 1
- (b) 2
- (c) $\frac{1}{2}$
- (d) 0

149. If $\operatorname{cosec} 31^\circ = x$, then $\sin^2 59^\circ + \frac{1}{\operatorname{cosec}^2 31^\circ} + \tan^2 59^\circ - \frac{1}{\sin^2 59^\circ \operatorname{cosec}^2 59^\circ}$ is equal to:

अगर $\operatorname{cosec} 31^\circ = x$, है, तो $\sin^2 59^\circ + \frac{1}{\operatorname{cosec}^2 31^\circ} + \tan^2 59^\circ - \frac{1}{\sin^2 59^\circ \operatorname{cosec}^2 59^\circ}$ बराबर है:

- a) $\sqrt{x+1}$
- b) $\sqrt{x^2-1}$
- c) $\sqrt{x-1}$
- d) $\sqrt{x^2+1}$

150. If $x = \sec 57^\circ$, then $\cot^2 33^\circ + \sin^2 57^\circ + \sin^2 33^\circ + \operatorname{cosec}^2 57^\circ \cos^2 33^\circ + \sec^2 33^\circ \sin^2 57^\circ$ is equal to:

यदि $x = \sec 57^\circ$ है, तो $\cot^2 33^\circ + \sin^2 57^\circ + \sin^2 33^\circ + \operatorname{cosec}^2 57^\circ \cos^2 33^\circ + \sec^2 33^\circ \sin^2 57^\circ$ बराबर है।

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

151. IF $\sin 20^\circ = a$, then find $\frac{\sin 110^\circ - \cos 160^\circ}{\tan 200^\circ}$?

यदि $\sin 20^\circ = a$ है, तो $\frac{\sin 110^\circ - \cos 160^\circ}{\tan 200^\circ}$ ज्ञात कीजिये ?

- | | |
|-------------------------|-------------------------|
| A) $\frac{2(1-a)}{a}$ | C) $\frac{2(1+a)}{a}$ |
| B) $\frac{2(1-a^2)}{a}$ | D) $\frac{2(1+a^2)}{a}$ |

152. $\sin^2 \frac{\pi}{32} + \sin^2 \frac{7\pi}{32} + \sin^2 \frac{9\pi}{32} + \sin^2 \frac{15\pi}{32}$

- a) $\frac{8}{3}$
- b) 2
- c) $\frac{7}{4}$
- d) $\frac{5}{16}$

153. $\cos^2 \frac{\pi}{40} + \cos^2 \frac{3\pi}{40} + \cos^2 \frac{7\pi}{40} + \cos^2 \frac{10\pi}{40} + \cos^2 \frac{13\pi}{40} + \cos^2 \frac{17\pi}{40} + \cos^2 \frac{19\pi}{40} = ?$

- a) 2
- b) 3
- c) $2\frac{1}{2}$
- d) $3\frac{1}{2}$

154. The value of $\sin^2 5^\circ + \sin^2 10^\circ + \sin^2 15^\circ + \dots + \sin^2 85^\circ + \sin^2 90^\circ$ is equal to:

$\sin^2 5^\circ + \sin^2 10^\circ + \sin^2 15^\circ + \dots + \sin^2 85^\circ + \sin^2 90^\circ$ का मान के बराबर है।

- (a) $9\frac{1}{2}$
- (b) 9
- (c) $8\frac{1}{2}$
- (d) 8

155. The value of $(\tan 29^\circ \cot 61^\circ - \operatorname{cosec}^2 61^\circ) + \cot^2 54^\circ - \sec^2 36^\circ + (\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \dots + \sin^2 89^\circ)$ is:

$(\tan 29^\circ \cot 61^\circ - \operatorname{cosec}^2 61^\circ) + \cot^2 54^\circ - \sec^2 36^\circ + (\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \dots + \sin^2 89^\circ)$ का मान है :

- a) $22\frac{1}{2}$
- b) 21
- c) $20\frac{1}{2}$
- d) 22

156. The value of $\frac{(\tan 25^\circ \cot 65^\circ - \operatorname{cosec}^2 65^\circ) + \cot^2 61^\circ - \sec^2 29^\circ}{\sin^2 5^\circ + \sin^2 7^\circ + \sin^2 9^\circ + \dots + \sin^2 85^\circ}$ is:

$\frac{(\tan 25^\circ \cot 65^\circ - \operatorname{cosec}^2 65^\circ) + \cot^2 61^\circ - \sec^2 29^\circ}{\sin^2 5^\circ + \sin^2 7^\circ + \sin^2 9^\circ + \dots + \sin^2 85^\circ}$ का मान ज्ञात करें।

- (a) $\frac{2}{45}$
- (b) $\frac{4}{45}$
- (c) $\frac{-2}{41}$



(d) $\frac{-4}{41}$

157. $\cos^2 1^\circ + \cos^2 2^\circ + \cos^2 3^\circ + \dots + \cos^2 90^\circ = ?$

158. Find the value of $\frac{\tan 1^\circ}{1+\tan 1^\circ} + \frac{\tan 2^\circ}{1+\tan 2^\circ} + \dots + \frac{\tan 89^\circ}{1+\tan 89^\circ}$?

- a) 44.5 b) 45 c) 44 d) 89

159. $\tan 7^\circ \cdot \tan 11^\circ \cdot \tan 23^\circ \cdot \tan 30^\circ \cdot \tan 45^\circ \cdot \tan 67^\circ \cdot \tan 79^\circ \cdot \tan 83^\circ = ?$

- a)
- $\sqrt{3}$
- b)
- $\frac{1}{\sqrt{3}}$
- c)
- $2\sqrt{3}$
- d) 2

160. The value of $\cot 13^\circ \cot 27^\circ \cot 60^\circ \cot 63^\circ \cot 77^\circ$ is:Cot $13^\circ \cot 27^\circ \cot 60^\circ \cot 63^\circ \cot 77^\circ$ का मान ज्ञात कीजिए।

- (a)
- $\sqrt{3}$
- (b) 1 (c) 0 (d)
- $\frac{1}{\sqrt{3}}$

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161. What is the value of $\cos 1^\circ \cdot \cos 2^\circ \cdot \cos 3^\circ \dots \cos 177^\circ \cdot \cos 178^\circ \cdot \cos 179^\circ$

 $\cos 1^\circ \cos 2^\circ \cdot \cos 3^\circ \dots \cos 177^\circ \cos 178^\circ \cos 179^\circ$ का मान क्या है?

1. 0 2. 1 3.
- $\frac{1}{\sqrt{2}}$
- 4.
- $\frac{1}{2}$

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162. $\frac{\sin 37^\circ + 2\tan 49^\circ}{\cos 53^\circ - \cot 41^\circ} - 5(\cot 11^\circ \cot 31^\circ \cot 45^\circ \cot 59^\circ \cot 79^\circ) + 3(\sin^2 76.5^\circ + \sin^2 \frac{3\pi}{40})$
a) 1 b) 0 c) -1 d) 2

163. The value of $\frac{(\cos 9^\circ + \sin 81^\circ)(\sec 9^\circ + \operatorname{cosec} 81^\circ)}{\sin 56^\circ \sec 34^\circ + \cos 25^\circ \operatorname{cosec} 65^\circ}$ is:
 $\frac{(\cos 9^\circ + \sin 81^\circ)(\sec 9^\circ + \operatorname{cosec} 81^\circ)}{\sin 56^\circ \sec 34^\circ + \cos 25^\circ \operatorname{cosec} 65^\circ}$ का मान है:

- a)
- $\frac{1}{2}$
- b) 4 b) 2 d) 1

164. The value of $\frac{(\sin 17^\circ + \cos 73^\circ)(\sec 73^\circ + \operatorname{cosec} 17^\circ)}{\operatorname{cosec}^2 71^\circ + \cos^2 15^\circ - \tan^2 19^\circ + \cos^2 75^\circ}$ is:

$\frac{(\sin 17^\circ + \cos 77^\circ)(\sec 73^\circ + \operatorname{cosec} 17^\circ)}{\operatorname{cosec}^2 71^\circ + \cos^2 15^\circ - \tan^2 19^\circ + \cos^2 75^\circ} = ?$
a) 1 b) 4 c) -3 d) 2

165. The value of $\frac{\tan(45^\circ - \alpha)}{\cot(45^\circ + \alpha)} \frac{(\cos 19^\circ + \sin 71^\circ)(\sec 19^\circ + \operatorname{cosec} 71^\circ)}{\tan 12^\circ \tan 24^\circ \tan 66^\circ \tan 78^\circ}$ is:

$\frac{\tan(45^\circ - \alpha)}{\cot(45^\circ + \alpha)} - \frac{(\cos 19^\circ + \sin 71^\circ)(\sec 19^\circ + \operatorname{cosec} 71^\circ)}{\tan 12^\circ \tan 24^\circ \tan 66^\circ \tan 78^\circ}$ का मान ज्ञात करें।

- (a) -3
-
- (b) 0
-
- (c) -2
-
- (d) 2

166. The value of $\frac{\tan 13^\circ \tan 36^\circ \tan 45^\circ \tan 54^\circ \tan 77^\circ}{2 \sec^2 60^\circ (\sin^2 60^\circ - 3 \cos 60^\circ + 2)}$ is:

$\frac{\tan 13^\circ \tan 36^\circ \tan 45^\circ \tan 54^\circ \tan 77^\circ}{2 \sec^2 60^\circ (\sin^2 60^\circ - 3 \cos 60^\circ + 2)}$ का मान ज्ञात करें।

- (a)
- $-\frac{1}{4}$



- (b) $-\frac{1}{10}$

(c) $\frac{1}{10}$

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

167.

$$2(\sin 1^\circ \times \sec 89^\circ) + 3(\cos 11^\circ \times \operatorname{cosec} 79^\circ) + 5(\tan 21^\circ \times \tan 69^\circ) = ?$$

168.

If $A+B = 90^\circ$, then the expression $\frac{\cot A}{\cot B} + \cos^2 A + \cos^2 B$ is equal to:

यदि $A + B = 90^\circ$ है, तो व्यंजक $\frac{\cot A}{\cot B} + \cos^2 A + \cos^2 B$ किसके बराबर है?

- (a) $\cot^2 B$ (b) $\operatorname{cosec}^2 A$ (c) $\operatorname{cosec}^2 B$ (d) $\cot^2 A$
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169. The value of $\frac{\sqrt{2}\tan(60^\circ-\theta)\tan(30^\circ+\theta)}{\sin^2(45^\circ+\theta)+\sin^2(45^\circ-\theta)}$ is

$$\frac{\sqrt{2}\tan(60^\circ-\theta)\tan(30^\circ+\theta)}{\sin^2(45^\circ+\theta)+\sin^2(45^\circ-\theta)}$$

- (a) $\frac{1}{\sqrt{2}}$

(b) 1

(c) 2

(d) $\sqrt{2}$

170. The value of $\frac{\cos 8^\circ \cos 24^\circ \cos 60^\circ \cos 66^\circ \cos 82^\circ}{\sin 82^\circ \sin 66^\circ \sin 60^\circ \sin 8^\circ \sin 24^\circ}$ is:

$\frac{\cos 8^\circ \cos 24^\circ \cos 60^\circ \cos 66^\circ \cos 82^\circ}{\sin 82^\circ \sin 66^\circ \sin 60^\circ \sin 8^\circ \sin 24^\circ}$ का मान कितना होगा?

- (a) **1**
(b) **-**
v
(c) **-**
v
(d) **0**

171. Evaluate the following expression.

दिए गए व्यंजक का मान ज्ञात करें।

$$\frac{3(\cot^2 46^\circ - \sec^2 44^\circ)}{2(\sin^2 28^\circ + \sin^2 62^\circ)} + \frac{2\cos^2 60^\circ \tan^2 33^\circ \tan^2 57^\circ}{\sin^2(90^\circ - \theta) - \cot^2 \theta}$$

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



172. The value of $\frac{4\tan^2 30^\circ + \sin^2 30^\circ \cos^2 45^\circ + \sec^2 48^\circ - \cot^2 42^\circ}{\cos 37^\circ \sin 53^\circ + \sin 37^\circ \cos 53^\circ + \tan 18^\circ \tan 72^\circ}$ is:

$\frac{4\tan^2 30^\circ + \sin^2 30^\circ \cos^2 45^\circ + \sec^2 48^\circ - \cot^2 42^\circ}{\cos 37^\circ \sin 53^\circ + \sin 37^\circ \cos 53^\circ + \tan 18^\circ \tan 72^\circ}$ का मान ज्ञात करें।
 (a) $\frac{35}{48}$ (b) $\frac{59}{48}$ (c) $\frac{49}{24}$ (d) $\frac{35}{24}$

173. The value of $\frac{3(\operatorname{cosec}^2 26^\circ - \tan^2 64^\circ) + (\cot^2 42^\circ - \sec^2 48^\circ)}{\cot(22^\circ - \theta) - \operatorname{cosec}^2(62^\circ + \theta) - \tan(\theta + 68^\circ) + \tan^2(28^\circ - \theta)}$ is:

$\frac{3(\operatorname{cosec}^2 26^\circ - \tan^2 64^\circ) + (\cot^2 42^\circ - \sec^2 48^\circ)}{\cot(22^\circ - \theta) - \operatorname{cosec}^2(62^\circ + \theta) - \tan(\theta + 68^\circ) + \tan^2(28^\circ - \theta)}$ का मान है।
 (a) 3 (b) 4 (c) -1 (d) -2

174. What is the value of $\frac{\operatorname{cosec}(78^\circ + \theta) - \sec(12^\circ - \theta) - \tan(67^\circ + \theta) + \cot(23^\circ - \theta)}{\tan 13^\circ \tan 37^\circ \tan 45^\circ \tan 53^\circ \tan 77^\circ}$?

$\frac{\operatorname{cosec}(78^\circ + \theta) - \sec(12^\circ - \theta) - \tan(67^\circ + \theta) + \cot(23^\circ - \theta)}{\tan 13^\circ \tan 37^\circ \tan 45^\circ \tan 53^\circ \tan 77^\circ}$ का मान क्या है ?

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

175. The value of $\frac{2\sin^2 38^\circ \sec^2 52^\circ + \cos 64^\circ \sin 26^\circ + \sin^2 64^\circ}{\tan^2 23^\circ + \cot^2 23^\circ - \sec^2 67^\circ - \operatorname{cosec}^2 67^\circ}$ is:

$\frac{2\sin^2 38^\circ \sec^2 52^\circ + \cos 64^\circ \sin 26^\circ + \sin^2 64^\circ}{\tan^2 23^\circ + \cot^2 23^\circ - \sec^2 67^\circ - \operatorname{cosec}^2 67^\circ}$ का मान ज्ञात कीजिए।
 (a) -2 (b) $\frac{3}{2}$
 (c) 2 (d) $\frac{-3}{2}$

176. If $\cos \theta - \sin \theta = \sqrt{3} \cos(90^\circ - \theta)$, $0^\circ < \theta < 90^\circ$ then find the value of $\tan \theta - \cot \theta$.

यदि $\cos \theta - \sin \theta = \sqrt{3} \cos(90^\circ - \theta)$, $0^\circ < \theta < 90^\circ$ है, तो $\tan \theta - \cot \theta$ का मान ज्ञात करें।

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

(b) $-\frac{3+2\sqrt{3}}{(1+\sqrt{3})}$

(c) $-\frac{3+2\sqrt{3}}{(1-\sqrt{3})}$

(d) $\frac{3-2\sqrt{3}}{(1+\sqrt{3})}$

177. If $6(\sec^2 59^\circ - \cot^2 31^\circ) - \frac{2}{3} \sin^2 90^\circ - 3 \tan^2 56^\circ \operatorname{y} \tan^2 34^\circ = \frac{y}{3}$, then the value of y is:

यदि $6(\sec^2 59^\circ - \cot^2 31^\circ) - \frac{2}{3} \sin^2 90^\circ - 3 \tan^2 56^\circ \operatorname{y} \tan^2 34^\circ = \frac{y}{3}$ है तो y का मान है:

a) $\frac{8}{5}$ b) $-\frac{8}{5}$ c) $\frac{2}{3}$ d) $-\frac{2}{3}$

178. If $\sin 3A = \cos(A+10^\circ)$, where $3A$ is an acute angle, then what is the value of $2\operatorname{cosec}\frac{3A}{2} + 6\sin^2 3A - \frac{3}{2}\tan^2 3A$?

यदि $\sin 3A = \cos(A+10^\circ)$ है, जहाँ $3A$ अन्यून कोण है, तो $2\operatorname{cosec}\frac{3A}{2} + 6\sin^2 3A - \frac{3}{2}\tan^2 3A$ का मान ज्ञात कीजिए?

(a) $\frac{7}{4}$ (b) 4 (c) $\frac{17}{2}$ (d) 5

179. If $\cos(2\theta + 54^\circ) = \sin \theta$, $0^\circ < (2\theta + 54^\circ) < 90^\circ$, then what is the value of $\frac{1}{\tan 5\theta + \operatorname{cosec}\frac{5\theta}{2}}$?



यदि $\cos(2\theta + 54^\circ) = \sin\theta$, $0^\circ < (2\theta + 54^\circ) < 90^\circ$ है, तो $\frac{1}{\tan 5\theta + \operatorname{cosec} \frac{5\theta}{2}}$ का मान ज्ञात कीजिए।

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

180. If $\tan(80-11^\circ) \cdot \tan(110-13^\circ) = 1$, then find the value of $\sin 100 + \cos 50^\circ$?

- a) $\sqrt{3}$ b) $\frac{2}{\sqrt{3}}$ c) $\frac{\sqrt{3}}{2}$ d) $\frac{3\sqrt{3}}{4}$

181. If $\tan x = \cot(48^\circ + 2x)$, and $0^\circ < x < 90^\circ$, then what is the value of x?

यदि $\tan x = \cot(48^\circ + 2x)$, और $0^\circ < x < 90^\circ$ है, तो x का मान ज्ञात करें?

- (a) 12°
 (b) 14°
 (c) 16°
 (d) 21°

182. If $\tan(5\theta - 10^\circ) = \cot(5\phi + 20^\circ)$, then the value of $\theta + \phi$ is:

यदि $\tan(5\theta - 10^\circ) = \cot(5\phi + 20^\circ)$ है, तो $\theta + \phi$ का मान क्या है?

- (a) 16° (b) 20° (c) 18° (d) 15°

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183. If $\tan 2\theta = \cot(\theta - 36^\circ)$, where 2θ is an acute angle,

then the value of θ is:

यदि $\tan 2\theta = \cot(\theta - 36^\circ)$, जहाँ 2θ एक कोण है, तो θ का मान ज्ञात कीजिए।

- (a) 18° (b) 30°
 (c) 36° (d) 42°

184. If $\tan(70^\circ - 3\theta) = \cot(9\theta - 280^\circ)$ then $\tan \frac{6\theta}{5} + \cos(\theta - 20^\circ) = ?$

- a) $\frac{3\sqrt{3}}{2}$ b) $\frac{2\sqrt{3}}{3}$ c) $\sqrt{3}$ d) $\frac{1}{\sqrt{3}}$

185. If $\tan(11\theta) = \cot(7\theta)$, then what is the value of $\sin^2(6\theta) + \sec^2(9\theta) + \operatorname{cosec}^2(12\theta)$?

यदि $\tan(11\theta) = \cot(7\theta)$ है, तो $\sin^2(6\theta) + \sec^2(9\theta) + \operatorname{cosec}^2(12\theta)$ का मान ज्ञात कीजिए।

- (a) $\frac{35}{12}$ (b) $\frac{23}{6}$ (c) $\frac{31}{12}$ (d) $\frac{43}{12}$

186. If $\sin(3x - 23^\circ) \cdot \sec(5x - 37^\circ) = 1$ then x?

- a) 16° b) 15.25° c) 12.25° d) 18.75°

187. If $\sin 3\theta \cdot \sec 2\theta = 1$, then what is the value of $[3\tan^2(5\theta/2) - 1]$?

यदि $\sin 3\theta \cdot \sec 2\theta = 1$, तो $[3\tan^2(5\theta/2) - 1]$ का मान क्या होगा?

- a) 0 b) 3 c) 1 d) 2

188. If $\operatorname{cosec} 2\theta = \sec(3\theta - 15^\circ)$, then θ is equal to:

यदि $\operatorname{cosec} 2\theta = \sec(3\theta - 15^\circ)$ है, तो θ बराबर है

- (a) 22° (b) 20° (c) 25° (d) 21°

189. If $\sec(5\alpha - 15^\circ) = \operatorname{cosec}(15^\circ - 2\alpha)$, then the value of $\cos\alpha + \sin 2\alpha + \tan(1.5\alpha)$ is:

यदि $\sec(5\alpha - 15^\circ) = \operatorname{cosec}(15^\circ - 2\alpha)$ है, तो $\cos\alpha + \sin 2\alpha + \tan(1.5\alpha)$ का मान ज्ञात करें।

- (a) $\sqrt{2} + 1$



Trigonometry Sheet-1

Maths By Gagan Pratap

BASIC SHEET

Maths Special Batch

By Gagan Pratap

- (b) $\sqrt{2} - 1$
- (c) $\sqrt{3} - 1$
- (d) $\sqrt{3} + 1$**

190. If $2\sec 2\theta = \tan \phi + \cot \phi$, then one of the values of $\theta + \phi$ = ?

यदि $2\sec 2\theta = \tan \phi + \cot \phi$, तो $\theta + \phi$ का एक मान होना चाहिए = ?

- (a) $\pi/2$
- (b) $\pi/4$**
- (c) $\pi/3$
- (d) $\pi/6$

191. If $0 < \theta < \frac{\pi}{2}$, $0 < \phi < \frac{\pi}{2}$ and $\cos \theta < \cos \phi$, then which of the following is correct?

- a) $\theta < \phi$
- b) $\theta > \phi$
- c) $\theta + \phi = 90^\circ$
- d) none

192. Which of the following is true for $0^\circ < \theta < 90^\circ$?

- a) $\cos \theta \leq \cos^2 \theta$
- b) $\cos \theta > \cos^2 \theta$
- c) $\cos \theta < \cos^2 \theta$
- d) $\cos \theta \geq \cos^2 \theta$

193. If $0 < x < \frac{\pi}{2}$ then $(\sin x + \operatorname{cosec} x)$ is

- a) > 2
- b) < 2
- c) ≤ 2
- d) ≥ 2**

194. $\sec^2 \theta = \frac{4xy}{(x+y)^2}$ is possible when

- a) $x = -y$
- b) $x < y$
- c) $x > y$
- d) $x = y$**

195. For what relation between a and b is the equation $\sin \theta = \frac{a+b}{2\sqrt{ab}}$ possible?

a और b के बीच किस संबंध के लिए समीकरण $\sin \theta = \frac{a+b}{2\sqrt{ab}}$ संभव है? (CDS 2023)

- A) $a=b$
- B) $a>b$
- C) $a \leq b$
- D) $a \geq b$

196. If the sum and difference of two angles are 135° and $\frac{\pi}{12}$ respectively, then the value of the largest angle in radian measure is:

दो कोणों का योग और अंतर क्रमशः 135° और $\frac{\pi}{12}$ है, तब बड़े कोण का मान रेडियन में ज्ञात करें ?

- a) $\frac{2\pi}{3}$
- b) $\frac{3\pi}{5}$
- c) $\frac{5\pi}{12}$
- d) $\frac{\pi}{2}$**

197. If the sum and difference of two angles are $22/9$ radian and 36° respectively, then the value of the smallest angle in degree measure is:

दो कोणों का योग और अंतर क्रमशः $22/9$ रेडियन और 36° है, तब छोटे कोण का मान रेडियन में ज्ञात करें ?

- a) 52°
- b) 60°
- c) 56°
- d) 48°**

198. Consider the following statements:

$\sin 1^\circ > \sin 1$

$\cos 1^\circ < \cos 1$

Which of the following statements is /are correct?

- a) 1 only
- b) 2 only
- c) both 1 & 2
- d) none