MATHS by MANOJ JOSHI

Marks:91 | Subject:10th-MATHS | Date:
Chapter:9 | Std 10 Maths -Chep 9 MCQ | Time:

[A] નીચે આપેલા ૪ જવાબો પૈકી સાચો વિકલ્પ પસંદ કરો. (પ્રત્યેકનો ૧ ગુણ) **[90]**

1. $\sin\theta + \cos\theta = \sqrt{2}\cos(90 - \theta)$ હોય, તો $\cot\theta$ = ...
   (A) $-\sqrt{2}$ (B) $\sqrt{2}$ (C) $\sqrt{2} + 1$ (D) $\sqrt{2} - 1$

2. જો $3\sin\theta = 4\cos\theta$ હોય, તો $\tan\theta$ = ...
   (A) $\frac{3}{2}$ (B) $\frac{2}{3}$ (C) $\frac{4}{3}$ (D) $\frac{3}{4}$

3. $15\tan^2\theta + 4\sec^2\theta = 23$ તો $\tan^2\theta$ = ...
   (A) $\frac{19}{11}$ (B) 45 (C) $\frac{27}{15}$ (D) 1

4. ΔABC માં $m\angle B = 90$, $m\angle C = 45$, $AB = 5$ હોય, તો BC = ...
   (A) $2\sqrt{5}$ (B) 5 (C) 2.5 (D) $5\sqrt{2}$

5. $\sin^2 60° - \tan 45° + \cos^2 30° - \cot 90°$ = ...
   (A) 1 (B) 2 (C) $\frac{1}{2}$ (D) 3

6. જો θ લઘુકોણનું માપ હોય, તો તે માટે $b\sin\theta = a\cos\theta$ તો $\frac{a\sin\theta - b\cos\theta}{a\sin\theta + b\cos\theta}$ = ...
   (A) $\frac{a^2+b^2}{a^2-b^2}$ (B) $\frac{a^2-b^2}{a^2+b^2}$ (C) $\frac{a+b}{a-b}$ (D) $\frac{a-b}{a+b}$

7. $\sec^2 60 - \operatorname{cosec}^2 30 + 4\cos^2 45 + \cos 30 \operatorname{cosec} 60$ ની કિંમત .... થાય.
   (A) –5 (B) –3 (C) 5 (D) 3

8. $\tan^2\theta[\operatorname{cosec}^2\theta - 1]$નું મૂલ્ય જણાવો.
   (A) $\tan^2\theta$ (B) $\operatorname{cosec}^2\theta$ (C) $\cot^2\theta$ (D) 1

9. ΔABCમાં જો $m\angle ABC = 90$, $m\angle ACB = 45$ અને $AC = 6$ તો ΔABCનું ક્ષેત્રફળ = ...
   (A) 18 (B) 36 (C) 9 (D) $\frac{9}{2}$

10. જો A અને B લઘુકોણ માટે $\tan A = 1$ અને $\sin B = \frac{1}{\sqrt{2}}$ હોય, તો $\cos(A + B)$ = ...
   (A) 0 (B) 1 (C) $\sqrt{2}$ (D) $\frac{1}{\sqrt{2}}$

11. જો $\tan\alpha = \frac{9}{40}$ અને $\sin\beta = \frac{7}{25}$ તો $\tan\alpha - \sin\beta$ ની કિંમત દશાંશ સ્વરૂપમાં મેળવો.
   (A) 55 (B) 0.55 (C) –0.055 (D) 0.044

12. જો $\operatorname{cosec}A = \frac{4}{3}$ અને $A + B = 90$ તો $\sec B$ = ... થાય.
   (A) $\frac{7}{3}$ (B) $\frac{16}{9}$ (C) $\frac{3}{4}$ (D) $\frac{4}{3}$

13. જો ΔABC માં $m\angle C = 90$ અને $\tan A = \frac{1}{\sqrt{3}}$, તો $\sin A$ = ...
   (A) $\frac{1}{2}$ (B) $\frac{\sqrt{3}}{2}$ (C) $\frac{1}{\sqrt{2}}$ (D) 0

14. કોઈક θ (જ્યાં $0 \le \theta < 90$) માટે નીચેના પૈકી કયું વિધાન સાચું છે ?
   (A) $\frac{1}{\sec\theta} > 1$ (B) $\frac{1}{\sec\theta} = 1$ (C) $\sec\theta = 0$ (D) $\frac{1}{\cos\theta} < 1$

15. ΔABC માટે $\sin\left(\frac{B+C}{2}\right)$ = ...
   (A) $\sin\frac{A}{2}$ (B) $\sin A$ (C) $\cos\frac{A}{2}$ (D) $\cos A$

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16. **જો $7\cos^2\theta + 3\sin^2\theta = 4$, તો $\cot\theta$ = ...**

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

17. **ΔABC માટે $\sin\left(\frac{B+C}{2}\right)$ = ...**

(A) $\sin\frac{A}{2}$ (B) $\sin A$ (C) $\cos\frac{A}{2}$ (D) $\cos A$

18. **$\tan5° \cdot \tan25° \cdot \tan45° \cdot \tan65° \cdot \tan85°$ = ...**

(A) 5 (B) 0 (C) 2 (D) 1

19. **$\tan^2 60° + 2\tan^2 45°$ = ...**

(A) 5 (B) $\frac{7}{3}$ (C) $\frac{11}{3}$ (D) $\frac{3}{7}$

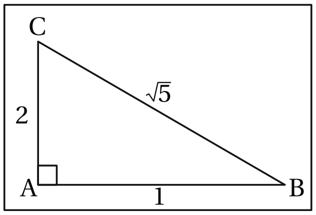
20. **નીચેની આકૃતિ પરથી $\tan\theta$ નું મૂલ્ય = ...**

(A) 2

(B) $\frac{1}{\sqrt{5}}$

(C) $\frac{2}{\sqrt{5}}$

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



21. **$\frac{\sin^2\theta-\cos^2\theta}{\sin^4\theta-\cos^4\theta}$ = ...**

(A) 1 (B) 2 (C) 4 (D) 10

22. **$\cos^2 45° - \cos^2 30° = x \cdot \cos45° \cdot \sin45°$ હોય, તો x = ...**

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

23. **$(1-\cos\theta)(1+\cos\theta)$ = ...**

(A) $\text{cosec}^2\theta$ (B) $\cos^2\theta$ (C) $2-\cos^2\theta$ (D) $\frac{1}{\text{cosec}^2\theta}$

24. **$\tan 10° \tan 80°$ = ...**

(A) અવ્યાખ્યાયિત (B) $\tan 90°$ (C) 1 (D) 0

25. **$\cot^2\theta - \text{cosec}^2\theta$ = ... $(0 < \theta < 90)$**

(A) 0 (B) 1 (C) -1 (D) અવ્યાખ્યાયિત

26. **જો $\sin\alpha + \sec\beta = 2$ તો $(\sin^2\alpha + \text{cosec}^2\alpha)$ = ... $(\alpha+\beta=90)$**

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

27. **$\sin\alpha = \frac{9}{41}$ હોય તો $\cos\alpha$ નું મૂલ્ય શોધો.**

(A) $\frac{40}{41}$ (B) $\frac{44}{41}$ (C) $\frac{41}{44}$ (D) $\frac{42}{44}$

28. **$\frac{\sqrt{\text{cosec}^2\theta-1}}{\text{cosec}\theta}$ નું મૂલ્ય = ...**

(A) $\cos\theta$ (B) $\sec\theta$ (C) $\sin\theta$ (D) $\text{cosec}\theta$

29. **જો $7\cos^2\theta + 3\sin^2\theta = 4$ હોય, તો $\tan\theta$ = ... હોય.**

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

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30. $\frac{\operatorname{cosec}^4\theta - \cot^4\theta}{\operatorname{cosec}^2\theta + \cot^2\theta}$ = ...

(A) 1 (B) 2 (C) $\operatorname{cosec}^2\theta + \cot^2\theta$ (D) 0

31. $1 - 2\sin^2 30$ = ...

(A) sin60 (B) tan60 (C) cosec60 (D) cos60

32. જો $\tan\theta = 1$ તો $2\sin\theta\cos\theta$ = ...

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

33. જો $\sin\alpha = \frac{3}{5}$ અને $\sin\beta = \frac{5}{13}$ હોય અને α, β લઘુકોણો હોય, તો $\sin\alpha \cdot \cot\beta + \cos\alpha \cdot \sin\beta$ નું મૂલ્ય =..........

(A) $\frac{56}{65}$ (B) $\frac{65}{56}$ (C) $\frac{33}{65}$ (D) $\frac{65}{33}$

34. જો $\sin 15\theta \cdot \sec 15\theta = 1$ તો θ = ...

(A) 3 (B) 15 (C) 1 (D) 0

35. $\frac{1}{3}\sin^2 60° - \frac{1}{2}\sec 60° \tan^2 30° + \frac{4}{3}\sin^2 45° \tan^2 60°$ ની કિંમત શોધો.

(A) $12\frac{1}{11}$ (B) $1\frac{11}{12}$ (C) $\frac{11}{12}$ (D) $\frac{12}{11}$

36. જો $\cos 15\theta = \sin 15\theta$ હોય તો θ = ...

(A) 1° (B) 3° (C) 15° (D) 12°

37. નીચે દર્શાવેલ ત્રિગુણોત્તરનાં આંતર-સંબંધોની જોડ પૈકી ...... જોડ સાચી છે.

(1)	cosθ	(a)	$\frac{\cos\theta}{\sin\theta}$
(2)	tanθ	(b)	$\frac{1}{\operatorname{cosec}\theta}$
(3)	cotθ	(c)	$\frac{1}{\sec\theta}$
(4)	sinθ	(d)	$\frac{1}{\cot\theta}$
		(e)	$\sin\theta \cdot \cos\theta$

(A) (1 - b),(2 - a),(3 - e),(4 - d) (B) (1 - c),(2 - d),(3 - a),(4 - b)
(C) (1 - e),(2 - b),(3 - c),(4 - d) (D) (1 - d),(2 - e),(3 - b),(4 - a)

38. $\cot\theta = \frac{4}{3}$, તો $\frac{\cos\theta - \sin\theta}{\cos\theta + \sin\theta}$ ની કિંમત ...... થાય.

(A) 7 (B) $\frac{1}{7}$ (C) $\frac{4}{3}$ (D) $-\frac{4}{3}$

39. જો A + B = 90, તો $\frac{\cot A \cdot \cot B + \cot A \cdot \tan B}{\sin A \cdot \sec B} - \frac{\sin^2 B}{\cos^2 A}$ = ...

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

40. $\frac{1}{\tan^2\theta} + 1$ = ...

(A) $\operatorname{cosec}^2\theta$ (B) $\sec^2\theta$ (C) $\cot^2\theta$ (D) $\cos^2\theta$

41. જો લઘુકોણના માપ A અને B માટે $\tan A = \frac{1}{\sqrt{3}}$ અને $\sin B = \frac{1}{2}$, તો cos(A + B) = ...

(A) 0 (B) $\frac{1}{2}$ (C) $\frac{\sqrt{3}}{2}$ (D) $\frac{1}{\sqrt{2}}$

42. જો θ એ લઘુકોણનું માપ હોય, અને $\sqrt{3}\sin\theta = \cos\theta$, તો θ = ...

(A) 30 (B) 45 (C) 60 (D) 90

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43. જો $\tan^2\theta = \sin^2\theta + \cos^2\theta$ હોય, તો θ = ...

(A) 45 (B) 60 (C) 90 (D) 30

44. જો $\tan\theta = \frac{1}{\sqrt{5}}$ તો $\frac{\operatorname{cosec}^2\theta - \sec^2\theta}{\operatorname{cosec}^2\theta + \sec^2\theta}$ = ...

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

45. જો $\sin\theta = \sqrt{\frac{1-\cos 2\theta}{2}}$ હોય તો $\sin 30°$ = ...

(A) $\frac{1}{3}$ (B) $\frac{1}{2}$ (C) $\frac{1}{4}$ (D) $\frac{1}{\sqrt{3}}$

46. $\tan 5\theta \cdot \tan 4\theta = 1$ તો θ = ...

(A) 3 (B) 7 (C) 10 (D) 9

47. જો $\tan\theta = \frac{1}{\sqrt{3}}$ હોય, તો θનું મૂલ્ય = ...

(A) 30 (B) 60 (C) 45 (D) 90

48. $\cot^2\theta - \frac{1}{\sin^2\theta}$ નું મૂલ્ય = ...

(A) 2 (B) 1 (C) 0 (D) –1

49. tan20 tan25 tan45 tan65 · tan70 ની કિંમત = ...

(A) –1 (B) 1 (C) 0 (D) $\sqrt{3}$

50. $\sec\theta = \sqrt{5}$ તો $\tan\theta - \sqrt{5}\sin\theta$ ની કિંમત = ...

(A) 0 (B) –1 (C) 1 (D) 2

51. જો $\sin^2(3x + 30) + \cos^2(2x + 45) = 1$ હોય તો x ની કિંમત કેટલી ?

(A) 10 (B) 15 (C) 20 (D) 30

52. $\sin^2 45 - \sin^2 60 = x \cos^2 45$ તો x = ...

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

53. જો $7\cos^2\theta + 3\sin^2\theta = 4$ હોય, તો $\cot\theta$ = ... થાય.

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

54. જો $\tan 5\theta \cdot \tan 4\theta = 1$ તો θ = ...

(A) 7 (B) 3 (C) 10 (D) 9

55. $\frac{1}{\cos^2\theta} - 1$ = ...

(A) $\sin^2\theta$ (B) $\cot^2\theta$ (C) $\tan^2\theta$ (D) $\cos^2\theta$

56. $2\sin 45° \cdot \cos 45° - \tan 45° \cdot \cot 45°$ = ...

(A) 0 (B) 1 (C) 2 (D) –2

57. જો $\tan^2\theta = \frac{8}{7}$ તો $\frac{(1+\sin\theta)(1-\sin\theta)}{(1+\cos\theta)(1-\cos\theta)}$ ની કિંમત .... છે.

(A) $\frac{7}{8}$ (B) $\frac{8}{7}$ (C) $\frac{49}{64}$ (D) $\frac{64}{49}$

58. જો 7θ અને 2θ લઘુકોણના માપ હોય તથા $\sin 7\theta = \cos 2\theta$ તો θ = ... થાય.

(A) 30 (B) 10 (C) 20 (D) 90

59. ΔABC માટે $\cos\left(\frac{B+C}{2}\right)$ = ...

(A) $\cos\frac{A}{2}$ (B) sin A (C) cos A (D) $\sin\frac{A}{2}$

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60. $(1 - \cos\theta)(1 + \cos\theta)(1 + \cot^2\theta) + 1 =$ ....

(A) 1 (B) 2 (C) 4 (D) 10

61. $\dfrac{\tan\theta}{\sqrt{1+\tan^2\theta}}$ નું મૂલ્ય = ...

(A) $\cos\theta$ (B) $\sin\theta$ (C) $\sec\theta$ (D) $\cot\theta$

62. જો A અને B કોટિકોણ હોય, તો $\sin A \times \sec B =$ .....

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

63. $\tan 62° = \dfrac{a}{b}$ તો $\tan 28° =$ ....

(A) $\dfrac{b}{a}$ (B) a (C) b (D) 1

64. કોઈક θ (જ્યાં $0 \le \theta < 90$) માટે નીચેના પૈકી ...... વિધાન સાચું છે.

(A) $\dfrac{1}{\cos\theta} < 1$ (B) $\sec\theta = 0$ (C) $\dfrac{1}{\sec\theta} = 1$ (D) $\dfrac{1}{\sec\theta} > 1$

65. $\dfrac{\sin^4\theta - \cos^4\theta}{\sin^2\theta - \cos^2\theta} =$ ....

(A) 1 (B) 2 (C) 3 (D) 4

66. જો $\cos^2 45° - \cos^2 30° = x \cdot \cos 45° \cdot \sin 45°$ તો $x =$ ....

(A) 2 (B) $\dfrac{3}{2}$ (C) $-\dfrac{1}{2}$ (D) $\dfrac{3}{4}$

67. જો θ લઘુકોણનું માપ હોય અને $\sqrt{3}\sin\theta = \cos\theta$ તો $\theta =$ ....

(A) 45° (B) 30° (C) 60° (D) 90°

68. જો $\sin 3\theta = \cos(\theta - 6)$ તો θ ની કિંમત = ...

(A) 6 (B) 18 (C) 72 (D) 24

69. $\dfrac{2\tan 30°}{1 - \tan^2 30°}$ ની કિંમત = ...

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

70. જો 7θ અને 2θ લઘુકોણના માપ હોય તથા $\sin 7\theta = \cos 2\theta$ હોય, તો $2\sin 3\theta - \sqrt{3}\tan 3\theta =$ .....

(A) 1 (B) 0 (C) -1 (D) $1 - \sqrt{3}$

71. $\tan\theta + \cot\theta = 3$ હોય, તો $\tan^2\theta + \cot^2\theta =$ ......

(A) 3 (B) 7 (C) 6 (D) 9

72. જો $\sin A = \dfrac{5}{13}$ અને $\cos B = \dfrac{3}{5}$ હોય તો $\sin A \cdot \cos B - \cos A \cdot \sin B$ ની કિંમત શોધો.

(A) 33 (B) 65 (C) $\dfrac{33}{65}$ (D) $-\dfrac{33}{65}$

73. $\dfrac{1}{\sin^2\theta} - 1 =$ ....

(A) $\sin^2\theta$ (B) $\cot^2\theta$ (C) $\tan^2\theta$ (D) $\cos^2\theta$

74. જો $\sin^2(3x + 45) + \cos^2(2x + 60) = 1$ હોય, તો $x =$ ....

(A) 30 (B) 15 (C) 60 (D) 0

75. જો $\sec\theta = \sqrt{5}$ હોય તો $\tan\theta - \sqrt{5}\sin\theta =$ ....

(A) 0 (B) 2 (C) 4 (D) 10

76. $\dfrac{7\sin 30° + 17\cos 60°}{5\tan 45°} =$ ....

(A) 5 (B) 12 (C) $\dfrac{12}{5}$ (D) $\dfrac{5}{12}$

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77. $\left(\cos^2\theta + \frac{1}{\operatorname{cosec}^2\theta}\right) + 4 = x$ હોય તો x નું મૂલ્ય કેટલું થાય ?

(A) 5 (B) 4 (C) 6 (D) 3

78. જો $\tan A = \frac{5}{12}$, તો $(\sin A + \cos A) \cdot \sec A$ નું મૂલ્ય .... છે.

(A) $\frac{12}{5}$ (B) $\frac{7}{12}$ (C) $\frac{17}{12}$ (D) $-\frac{7}{12}$

79. જો $0 < x < 90$ અને $\sin x = \tan 45 - \sin 45 \cdot \cos 45$, તો $x =$ ....

(A) 90 (B) 45 (C) 60 (D) 30

80. ΔABC માં $m\angle B = 90$, $AB = 12$, $BC = 9$ હોય, તો $\cos C$ નું મૂલ્ય શોધો.

(A) $\frac{3}{5}$ (B) $\frac{3}{4}$ (C) $\frac{5}{3}$ (D) $\frac{4}{3}$

81. $\frac{\sin^4\theta - \cos^4\theta}{\sin^2\theta - \cos^2\theta} =$ ....

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

82. $\alpha = 60°$, $\beta = 30°$ તો $\sin\beta \cdot \sec\alpha$ નું મૂલ્ય = ...

(A) 1 (B) 4 (C) $\frac{\sqrt{3}}{4}$ (D) $\sqrt{3}$

83. $\frac{\sin 45 \cos(90-\theta)}{\cos 45 \cdot \sin(90-\theta)}$ નું મૂલ્ય = ...

(A) $\tan\theta$ (B) $\cot\theta$ (C) 1 (D) $-\tan\theta$

84. $\sec(90-\theta) - x\sin\theta \cdot \tan(90-\theta) = \cos(90-\theta)$ તો x ની કિંમત .... છે

(A) $\cot\theta$ (B) $\sec\theta$ (C) $\operatorname{cosec}\theta$ (D) $\sin\theta$

85. જો $\operatorname{cosec} A = \frac{4}{3}$ અને $A + B = 90$ તો $\sec B =$ ....

(A) $\frac{3}{4}$ (B) $\frac{1}{3}$ (C) $\frac{4}{3}$ (D) $\frac{7}{3}$

86. જો $\tan^2\theta = \frac{7}{8}$, તો $\frac{(1+\sin\theta)(1-\sin\theta)}{(1-\cos\theta)(1+\cos\theta)}$ ની કિંમત ...... છે.

(A) $\frac{7}{8}$ (B) $\frac{8}{7}$ (C) $\frac{64}{49}$ (D) $\frac{49}{64}$

87. કાટકોણ ΔABC માટે નીચેનામાંથી ..... સત્ય છે.

(A) $0 > \sin A \geq 2$ (B) $0 < \sin A \leq 2$ (C) $0 < \sin A < 1$ (D) $0 > \sin A > 1$

88. જો $\tan\theta = \frac{4}{3}$, તો $\sqrt{\frac{1-\sin\theta}{1+\sin\theta}}$ ની કિંમત .... છે.

(A) $\frac{1}{3}$ (B) 3 (C) $\frac{3}{4}$ (D) $\frac{9}{16}$

89. $\tan^2\theta - \sec^2\theta =$ ....

(A) 1 (B) -1 (C) 0 (D) $\cot^2\theta$

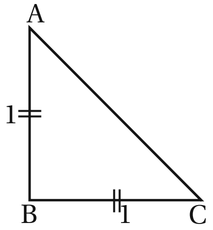
90. જો $5\cos A = 4\sin A$ હોય, તો $\tan A =$ ......

(A) $\frac{1}{4}$ (B) $\frac{5}{4}$ (C) 5 (D) $\frac{4}{5}$

[B] નીચેના પ્રશ્નોના ટૂંકમાં ઉત્તર લખો. (પ્રત્યેકનો ૧ ગુણ) **[01]**

1. આપેલ આકૃતિ પરથી $\tan A \cdot \tan C =$ ......

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



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