



MATHS

BOOKS - BEYOND PUBLICATION

TRIGONOMETRY

Example

1. If $\tan A = \frac{3}{4}$, then find the other trigonometric ratio of angle A.



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2. If $\angle A$ and $\angle P$ are acute angles such that $\sin A = \sin P$ then prove that $\angle A = \angle P$

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3. Consider a triangle PQR, right at R, in which PQ = 29 units, QR = 21 units and $\angle PQR = \theta$, then find the values of

(i) $\cos^2 \theta + \sin^2 \theta$ and (ii) $\cos^2 \theta - \sin^2 \theta$

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4. Identify "Hypotenuse", "Opposite side" and "Adjacent side" for the given angles in the given triangles.

For angle A



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5. Identify "Hypotenuse", "Opposite side" and "Adjacent side" for the given angles in the given triangles.

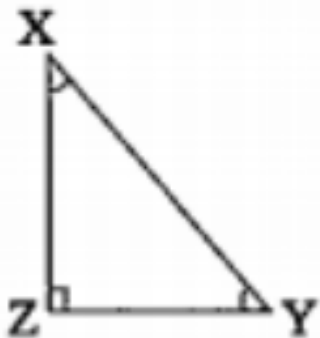
For angle X



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6. Identify "Hypotenuse", "Opposite side" and "Adjacent side" for the given angles in the given triangles.

For angle Y



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7. Identify "Hypotenuse", "Opposite side" and "Adjacent side" for the given angles in the given triangles.

Find (i) $\sin C$ (ii) $\cos C$ (iii) $\tan C$ in the given triangle.

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8. In triangle XYZ, $\angle Y$ is right angle, $XZ = 17\text{cm}$ and $YZ = 15\text{ cm}$

then find

(1) $\sin X$ (ii) $\cos Z$ (iii) $\tan X$



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9. In triangle XYZ, $\angle Y$ is right angle, $XZ = 17\text{cm}$ and $YZ = 15\text{ cm}$

then find

(1) $\sin X$ (ii) $\cos Z$ (iii) $\tan X$



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10. In triangle XYZ, $\angle Y$ is right angle, $XZ = 17\text{cm}$ and $YZ = 15$

cm then find

(1) $\sin X$ (ii) $\cos Z$ (iii) $\tan X$



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11. In a triangle PQR with right angle at Q , the value of $\angle P$ is x , $PQ = 7\text{cm}$ and $QR = 24\text{cm}$, then find $\sin x$ and $\cos x$

x

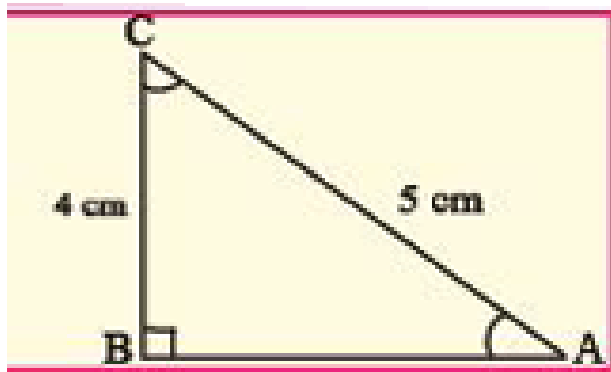


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12. Write length of "Hypotenuse ", "Opposite side " and "Adjacent side " for the given angles in the given triangles.

1. For angle C

2. For angle A

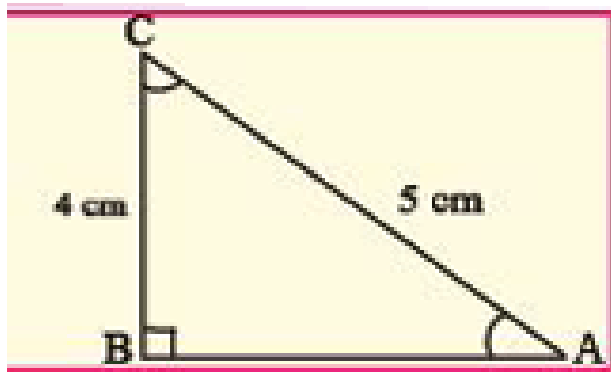


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13. Write length of "Hypotenuse ", "Opposite side " and "Adjacent side " for the given angles in the given triangles.

1. For angle C

2. For angle A



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14. In a right angle triangle ABC, right angle is at C, $BC+CA = 23$ cm and $BC-CA = 7$ cm ,then find $\sin A$ $\tan B$

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15. What will be the ratio of sides for $\sec A$ and $\cot A$?

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16. Discuss among your friends

Does $\sin x = \frac{4}{3}$ exists for some value of angle?

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17. Discuss among your friends

The value of $\sin A$ and $\cos A$ is always less than 1, Why?

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18. Discuss among your friends

$\tan A$ is product of \tan and A

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19. Is $\frac{\sin A}{\cos A}$ equal to $\tan A$?

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20. Is $\frac{\cos A}{\sin A}$ equal to $\cot A$?

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21. In right angle triangle ABC, 8cm ,15 cm and 17 cm are the length of AB,BC and CA respectively , Then find $\sin A$, $\cos A$ and $\tan A$.

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22. The sides of a right angle triangle PQR are $PQ = 7\text{cm}$, $PR = 25\text{ cm}$ and $\angle Q = 90^\circ$ respectively , Then find $\tan P - \tan R$

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23. In a right angle triangle ABC with right angle at B , in which $a = 24$ units , $b = 25$ units and $\angle BAC = \theta$, then find $\sin A \tan A$ ($A < 90^\circ$)

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24. If $\cos A = \frac{12}{13}$, then find $\sin A$ and $\tan A$ ($A < 90^\circ$)

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25. If $3 \tan A = 4$, then find $\sin A$ and $\cos A$



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26. If $\angle A$ and $\angle P$ are acute angles such that $\sin A = \sin P$ then prove that $\angle A = \angle P$



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27. Given $\cot \theta = \frac{7}{8}$, then evaluate

$$\frac{(1 + \sin \theta)(1 - \sin \theta)}{(1 + \cos \theta)(1 - \cos \theta)}$$



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28. $\cot \theta = \frac{7}{8}$ అయిన $\frac{1 + \sin \theta}{\cos \theta}$ లను కనుగొనుము.

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29. In a right angle triangle ABC, right angle is at B if $\tan A = \sqrt{3}$ then find the value of $\sin A \cos C + \cos A \sin C$

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30. In a right angle triangle ABC, right angle is at B, if $\tan A = \sqrt{3}$, then find the value of $\cos A \cos C - \sin A \sin C$

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31. In $\triangle ABC$, right angle is at B, $AB = 5\text{cm}$ and $\angle ACB = 30^\circ$ Determine the lengths of the sides BC and AC.

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32. A chord of a circle of radius 6cm is making an angle 60° at the centre. Find the length of the chord.

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33. In $\triangle PQR$,right angle is at Q, $PQ = 3\text{cm}$ and $PR = 6\text{cm}$
Determine $\angle QPR$ and $\angle PRQ$

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34. $\sin (A-B) = \frac{1}{2}$, $\cos (A+B) = \frac{1}{2}$, '0^(0)'B' అయిన A మరియు B విలువలు కనుక్కోండి.

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35. Find the values of $\operatorname{cosec}60^\circ$, $\sec 60^\circ$ and $\cot 60^\circ$

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36. Find the values of $\sin 30^\circ$, $\cos 30^\circ$, $\tan 30^\circ$, $\operatorname{cosec}30^\circ$, $\sec 30^\circ$ and $\cot 30^\circ$

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37. Find the values for tan

90° , $\csc 90^\circ$, $\sec 90^\circ$ and $\cot 90^\circ$

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38. Discuss with your friends about the following conditions:

What can you say about $\csc 0^\circ = \frac{1}{\sin 0^\circ}$? Is it defined

? Why?

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39. Discuss with your friends about the following conditions:

What can you say about $\cot 0^\circ = \frac{1}{\tan 0^\circ}$ Is it defined ?

Why ?

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40. Discuss with your friends about the following conditions:

$\sec 0^\circ = 1$ Why?

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41. What can you say about the values of $\sin A$ and $\cos A$, as the value of angle A increases from 0° to 90° ?

$A > B$, then $\sin A > \sin B$. Is it true?

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42. What can you say about the values of $\sin A$ and $\cos A$, as the value of angle A increases from 0° to 90° ?

If $A > B$, then $\cos A > \cos B$. Is it true? Discuss.

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43. Evaluate the following

$$\sin 45^\circ + \cos 45^\circ$$

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44. Evaluate the following

$$\frac{\cos 45^\circ}{\sec 30^\circ + \cos 60^\circ}$$





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45. Evaluate the following

$$\frac{\sin 30^\circ + \tan 45^\circ - \sec 60^\circ}{\cot 45^\circ + \cos 60^\circ - \sec 30^\circ}$$



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46. Evaluate the following

$$2 \tan^2 45^\circ + \cos^2 30^\circ - \sin^2 60^\circ$$



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47. Evaluate the following

$$\frac{\sec^2 60^\circ - \tan^2 60^\circ}{\sin^2 30^\circ + \cos^2 30^\circ}$$





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48. The value of $\frac{2\tan 30^\circ}{1 + \tan^2 30^\circ} =$

A. $\sin 60^\circ$

B. $\cos 60^\circ$

C. $\tan 30^\circ$

D. $\sin 30^\circ$

Answer:



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49. $\frac{1 - \tan^2 45^\circ}{1 + \tan^2 45^\circ} = \dots\dots\dots$

A. $\tan 90^\circ$

B. 1

C. $\sin 45^\circ$

D. 0

Answer:



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50. $\frac{2\tan 30^\circ}{1 - \tan^2 30^\circ} =$

A. $\cos 60^\circ$

B. $\sin 60^\circ$

C. $\tan 60^\circ$

D. $\sin 30^\circ$

Answer:

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51. Evaluate $\sin 60^\circ \cos 30^\circ - \sin 30^\circ \cos 60^\circ$, What is the value of $\sin(60^\circ - 30^\circ)$ What can you conclude ?

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52. Is it right to say that $\cos(60^\circ + 30^\circ) = \cos 60^\circ \cos 30^\circ - \sin 60^\circ \sin 30^\circ$

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53. In right angle triangle ΔPQR , right angle at Q, $PQ = 6\text{cm}$ and $\angle RPQ = 60^\circ$ Determine the lengths of QR and PR.

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54. In ΔXYZ , right angle is at Y, $YZ = x$, and $XZ = 2x$ Then determine $\angle YXZ$ and $\angle YZX$.

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55. Is it right to say that $\sin(A + B) = \sin A + \sin B$?
Justify your answer.

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56. Evaluate $\frac{\sec 35^\circ}{\csc 55^\circ}$

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57. If $\cos 7A = \sin(A - 6^\circ)$, where $7A$ is an acute angle, find the value of A .

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58. If $\sin A = \cos B$, then prove that $A+B = 90^\circ$

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59. Express $\sin 81^\circ + \tan 81^\circ$ in terms of trigonometric ratio of angles between 0° and 45°

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60. If A , B and C are interior angles of triangle ABC , then

show that
$$\sin \left(\frac{B + C}{2} \right) = \frac{\cos(A)}{2}$$

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61. For which value of an acute angle

θ , (i) $\frac{\cos \theta}{1 - \sin \theta} + \frac{\cos \theta}{1 + \sin \theta} = 4$ is true?

For which value of $0^\circ \leq \theta \leq 90^\circ$, above equation is not defined?

62. Check and discuss the above relations

$$\left[\begin{aligned} \sin(90^\circ - x) &= \frac{AB}{AC} = \cos x \\ \cos(90^\circ - x) &= \frac{BC}{AC} = \sin x \\ \tan(90^\circ - x) &= \frac{AB}{BC} = \cot x \\ \cot(90^\circ - x) &= \frac{BC}{AB} = \tan x, \\ \operatorname{cosec}(90^\circ - x) &= \frac{AC}{AB} = \sec x, \\ \sec(90^\circ - x) &= \frac{AC}{BC} = \operatorname{cosec} x \end{aligned} \right],$$

in the case of angle between 0° and 90° , whether they hold

for these angles or not? So,

$$\sin(90^\circ - A) = \cos A$$

63. Check and discuss the above relations

$$\left[\sin(90^\circ - x) = \frac{AB}{AC} = \cos x \right.$$

$$\cos(90^\circ - x) = \frac{BC}{AC} = \sin x$$

$$\tan(90^\circ - x) = \frac{AB}{BC} = \cot x$$

$$\cot(90^\circ - x) = \frac{BC}{AB} = \tan x,$$

$$\operatorname{cosec}(90^\circ - x) = \frac{AC}{AB} = \sec x,$$

$$\sec(90^\circ - x) = \frac{AC}{BC} = \operatorname{cosec} x \left. \right],$$

in the case of angle between 0° and 90° , whether they hold

for these angles or not? So,

$$\cos(90^\circ - A) = \sin A$$



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64. Check and discuss the below relations in the case of angles between 0° and 90° , whether they hold for these angles or not? $\tan (90- A) = \cot A$

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65. Check and discuss the below relations in the case of angles between 0° and 90° , whether they hold for these angles or not? $\cot(90 - A) = \tan A$

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66. Check and discuss the above relations in the case of angles between 0° and 90° , whether they hold for these

angles or not? $\cos ec(90^\circ - A) = \sec A$

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67. Check and discuss the above relations in the case of angles between 0° and 90° , whether they hold for these angles or not? $\sec(90^\circ - A) = \cos ec A$

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68. Evaluate

$$\frac{\tan 36^\circ}{\cot 54^\circ}$$

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69. Evaluate

$$\cos 12^\circ - \sin 78^\circ$$

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70. Evaluate

$$\cos ec 31^\circ - \sec 59^\circ$$

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71. Evaluate

$$\sin 15^\circ \sec 75^\circ$$

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72. Evaluate

$$\tan 26^\circ \tan 64^\circ$$



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73. Show that

$$\tan 48^\circ \tan 16^\circ \tan 42^\circ \tan 74^\circ = 1$$



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74. Show that

$$\cos 36^\circ \cos 54^\circ - \sin 36^\circ \sin 54^\circ = 0$$



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75. If $\tan 2A = \cot(A - 18^\circ)$ where $2A$ is an acute angle ,

Find the value of A .



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76. If $\tan A = \cot B$ where A and B are acute angles prove

that $A + B = 90^\circ$



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77. If A , B and C are interior angles of a triangle ABC , then

show that $\tan\left(\frac{A + B}{2}\right) = \cot C / (2)$



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78. Expression $\sin 75^\circ + \cos 65^\circ$ in terms of trigonometric ratios of angles between 0° and 45°

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79. Show that $\cot \theta + \tan \theta = \sec \theta \operatorname{cosec} \theta$

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80. Show that $\tan^2 \theta + \tan^4 \theta = \sec^4 \theta - \sec^2 \theta$

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81. $\sqrt{\frac{1 + \cos \theta}{1 - \cos \theta}} = \operatorname{cosec} \theta + \cot \theta$ నిరూపించండి.

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82. If $\sin C = \frac{15}{17}$, then find $\cos C$,

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83. If $\tan x = \frac{5}{12}$, then find $\sec x$.

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84. If $\cos ec\theta = \frac{25}{7}$, then find $\cot \theta$

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85. Evaluate the following and justify your answer.

(i)
$$\frac{\sin^2 15^\circ + \sin^2 75^\circ}{\cos^2 36^\circ + \cos^2 54^\circ}$$

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86. Find $\sin 5^\circ \cos 85^\circ + \cos 5^\circ \sin 85^\circ$

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87. Find $\sec 16^\circ \csc 74^\circ - \cot 74^\circ \tan 16^\circ$

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88. Are these identities true only for $0^\circ \leq A \leq 90^\circ$? If not, for which other values of A they are true?

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

$$\operatorname{cosec}^2 A - \cot^2 A = 1$$

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89. Are these identities true only for $0^\circ \leq A \leq 90^\circ$? If not, for which other values of A they are true?

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

$$\operatorname{cosec}^2 A - \cot^2 A = 1$$

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90. Evaluate the following

$$(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \operatorname{cosec} \theta)$$

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91. Evaluate the following :

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

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92. Evaluate the following :

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

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93. Show that $(\cos ec \theta - \cot \theta)^2 = \frac{1 - \cos \theta}{1 + \cos \theta}$

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94. $\sqrt{\frac{1 + \sin A}{1 - \sin A}} =$

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95. Show that $\frac{1 - \tan^2 A}{\cot^2 A - 1} = \tan^2 A$

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96. Show that $\frac{1}{\cos \theta} - \cos \theta = \tan \theta \cdot \sin \theta$

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97. Simplify $\sec A (1 - \sin A)(\sec A + \tan A)$



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98. Prove that
 $(\sin A + \csc A)^2 + (\cos A + \sec A)^2 = 7 + \tan^2 A + \cot^2 A$



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99. Simplify $(1 - \cos \theta)(1 + \cos \theta)(1 + \cot^2 \theta)$.



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100. If $\sec \theta + \tan \theta = p$, then what is the value of $\sec \theta - \tan \theta$?



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101. If $\cos e\theta + \cot \theta = k$, then prove that $\cos \theta = \frac{k^2 - 1}{k^2 + 1}$

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102. Prove that $\frac{\cot \theta - \cos \theta}{\cot \theta + \cos \theta} = \frac{\cos e\theta - 1}{\cos e\theta + 1}$

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103. $1/\sec \theta - \tan \theta =$

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104.

Prove

that

$$(\sec A - \sin A)(\sec A - \cos A) = \frac{1}{\tan A + \cot A}$$

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105. Prove that
$$\frac{1 + \sec A}{\sec A} = \frac{\sin^2 A}{1 - \cos A}$$

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106. Show that
$$\left(\frac{1 + \tan^2 A}{1 + \cot^2 A} \right) = \left(\frac{1 + \tan}{1 - \cot A} \right)^2 = \tan^2 A$$

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107. Prove that
$$\frac{(\sec A - 1)}{(\sec A + 1)} = \left(\frac{1 - \cos A}{(1 + \cos A)} \right)$$



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108. In a right angled triangle ABC, with right angle at B in which $a = 5$ units, $b = 13$ units and $\angle BCA = \theta$, then find $\sin \theta$ and $\tan \theta$.



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109. If $\cos c = 3/5$, then find $\sin c$ and $\tan c$.



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110. If $3 \tan A = 4$, then find $\sin A$ and $\cos A$



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111. If $5 \cot A = 12$, find $\cos A$ and $\operatorname{cosec} A$.

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112. Evaluate the following:

$$\sin 60^\circ + \cos 60^\circ$$

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113. Evaluate the following:

$$\frac{\sin 45}{\sin 30 + \cos 60}$$

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114. Evaluate the following:

$$\tan^2 30^\circ + \cot^2 45^\circ - \cos 60$$



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115. Evaluate the following:

$$2 \tan^2 45^\circ + \sin^2 60^\circ - \cos^2 30^\circ$$



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116. Evaluate the following:

$$\cot^2 30^\circ + 4 \sin^2 45^\circ + 3 \operatorname{cosec} 60^\circ$$



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117. Evaluate the following:

$$\sqrt{2} \cdot \sin 45^\circ + \cos 90^\circ + \sin 90^\circ$$



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118. Evaluate $\sin 60^\circ \cos 30^\circ - \sin 30^\circ \cos 60^\circ$, What is the value of $\sin(60^\circ - 30^\circ)$ What can you conclude ?



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119. Is it right to say that

$$\cos(60^\circ + 30^\circ) = \cos 60^\circ \cos 30^\circ - \sin 60^\circ \sin 30^\circ$$



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120. Is it right to say that $\sin(A + B) = \sin A + \sin B$?

Justify your answer.



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121. Evaluate

$$\frac{\sin 66}{\cos 24}$$



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122. Evaluate

$$\frac{\sin 18}{\cos 72}$$



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123. Evaluate

$$\frac{\tan 80}{\cot 10}$$



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124. Evaluate

$$\frac{\sec 69}{\cos ec21}$$



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125. Evaluate

$$\frac{\tan 54}{\cot 36}$$



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126. Find the value of

$$\sin 75^\circ - \cos 15^\circ$$



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127. Find the value of

$$\sec 23^\circ - \operatorname{cosec} 67^\circ$$



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128. Find the value of

$$\operatorname{cosec} 70^\circ - \sec 20^\circ$$



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129. Find the value of

$$\tan 68^\circ - \cot 22^\circ$$



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130. If $\cot 2A = \tan (A - 18)$, when $2A$ is an acute angle, find the value of A .



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131. If $\cos 4A = \sin(A - 20)$, when $4A$ is an acute angle, find the value of A .



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132. If $\sin \theta + \cos \theta = 2$, find the value of $\sin^2 \theta + \cos^2 \theta$.

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133. Show that $\frac{\tan A + \cot B}{\tan B + \cot A} = \tan A \cot B$.

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134. Show that $(\sin \theta + \cos \theta)^2 - (\sin \theta - \cos \theta)^2 = 4 \sin \theta \cos \theta$

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135. Find the value of

$$\frac{\tan^2 60 + 4 \sin^2 45 + 3 \sec^2 30 + 10 \cos^2 90}{\cos^2 60 + \cos 60 - \cot^2 60}$$



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136. Show that $\frac{1}{\sin \theta} - \sin \theta = \cot \theta \cdot \cos \theta$



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137. Show that $\frac{\tan^2 \theta}{1 + \sec \theta} = \frac{1 - \cos \theta}{\cos \theta}$



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138. Evaluate: $\log_4 (1 + \tan^2 45^\circ)^2$



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139. Is it true to say that $\cos(60^\circ + 30^\circ) = \cos 60^\circ \cos 30^\circ + \sin 60^\circ \sin 30^\circ$

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140. In $\triangle ABC$, $\angle C = 90^\circ$ If $BC + CA = 17$ cm, $BC - CA = 7$ cm. Find

Sin A

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

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142. If $\sec \theta + \cot \theta = k$, then prove that $\cos \theta = \frac{k^2 - 1}{k^2 + 1}$

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143. If $\sin A = \cos A$ then find the value of A.

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144. If $4 \sin^2 \theta - 1 = 0$ then find $\theta (\theta < 90)$ also, Find the value of $\cos^2 \theta + \tan^2 \theta$

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145. Show that $\tan^2 \theta - \left(\frac{1}{\cos^2 \theta} \right) = -1$

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146. Find the value of

$$\left(\frac{\sec 15^\circ}{\csc 75^\circ} \right) + \left(\frac{\sin 72^\circ}{\cos 18^\circ} \right) - \left(\frac{\tan 33^\circ}{\cot 57^\circ} \right)$$

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147. If $\tan \theta = \sqrt{3}$ (θ is acute \angle) then find the value of $1 + \cos \theta$.

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148. Show that $\sqrt{\frac{1 - \sin \theta}{1 + \sin \theta}} = \sec \theta - \tan \theta$.

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149. $\tan(A + B) = 1$ మరియు

$$\cos(A - B) = \frac{\sqrt{3}}{2}, 0^\circ < A + B < 90^\circ, A > B \text{ అయితే } A$$

మరియు B ల విలువలు కనుక్కోండి.



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150. Evaluate $\frac{\tan^2 60 + 4 \cos^2 45 + 3 \sec^2 30 + 5 \cos^2 90}{\operatorname{cosec} 30 + \sec 60 - \cot^2 30}$



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151. If $\sin A = \frac{4}{5}$ then find $\tan A, \cot A, \operatorname{cosec} A$.



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152. If $\cot A = \frac{5}{7}$ then find the cosecA , tan A, Sec A.

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153. $\cos 60^\circ + \sin 30^\circ$ value is.....

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154. Find the value of $\tan 45^\circ + \cot 45 - \sec 60^\circ$

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155. Find the value of $\frac{3 \sin 45}{2 \tan 30}$.

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156. Find the value of $2\tan 30^\circ + \frac{\cos 45^\circ}{2\cot 45^\circ}$

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157. Value of $\cos 18^\circ - \sin 72^\circ$

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158. Value of $\tan 35^\circ - \cot 55^\circ$

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159. If $\cos A = \frac{3}{4}$ then find the value of $\sin A$.



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160. If $\operatorname{cosec} A = \frac{5}{4}$ then find the value of $\cot A$.



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161. Prove that $\frac{(\sec A - 1)}{(\sec A + 1)} = \left(\frac{1 - \cos A}{(1 + \cos A)} \right)$



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162. Show that $\frac{\operatorname{cosec} A - 1}{\operatorname{cosec} A + 1} = \frac{1 - \sin A}{1 + \sin A}$



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163. Show that $\left(\frac{1 + \tan^2 A}{1 + \cot^2 A}\right) = \left(\frac{1 + \tan}{1 - \cot A}\right)^2 = \tan^2 A$

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164. Show that $\frac{\cos ecA - 1}{\cos ecA + 1} = \frac{1 - \sin A}{1 + \sin A}$

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165. If $\sin \theta = \frac{p}{q}$ then find $\tan \theta$.

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166. If $\cos ec\theta = 2$ and $\cot \theta = (\sqrt{3})p$ where θ is an acute angle, then the value of 'p' is



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167. If $\tan \theta = \frac{7}{8}$ then find the value of

$$\frac{(1 + \sin \theta)(1 - \sin \theta)}{(1 + \cos \theta)(1 - \cos \theta)}$$



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168. If $\frac{1}{2} \tan^2 45^\circ = \sin^2 A$ and 'A' is acute then the value of

A is



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169. If $\tan \theta = 1$ then find the value of $\frac{5 \sin \theta + 4 \cos \theta}{5 \sin \theta - 4 \cos \theta}$



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170. If $\sin \theta = \frac{12}{13}$ then find the $\cot \theta$.

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171. $\tan \theta = \frac{1}{\sqrt{3}}$ అయిన $\cos \theta =$

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172. $5 \sin A = 3$ అయిన $\sec^2 A - \tan^2 A =$

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173. Find the value of $3 \sin^2 45^\circ + 2 \cos^2 60^\circ$.



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174. Value of $\cos 240^\circ$



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175. If $\sin(A - B) = \frac{1}{2}$, $\cos(A+B) = \frac{1}{2}$ then find 'B' value.



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176. In right angle $\triangle ABC$, $\angle B = 90^\circ$, $\tan c = \frac{5}{12}$ then the length of hypotenuse is .



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177. $\tan \theta \cdot \frac{\sqrt{1 - \sin^2 \theta}}{\sqrt{1 - \cos^2 \theta}} =$

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178. If $\sin \theta \cdot \cos \theta = k$ then find the $\sin \theta + \cos \theta$.

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179. If $3 \cot \theta = 5$, then $\frac{5 \sin \theta - 3 \cos \theta}{5 \sin \theta + 3 \cos \theta}$

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

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181. If $\sin \theta + \sin^2 \theta = 1$, then $\cos^2 \theta + \cos^4 \theta =$

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182. $\cos 1^\circ \cdot \cos 2^\circ \cdot \cos 3^\circ \dots \cos 180^\circ$ యొక్క విలువ

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183. Find the values of $\sec 240^\circ$, $\tan 750^\circ$, $\csc 300^\circ$.

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184. Find the value of $\frac{\sin^4 \theta - \cos^4 \theta}{\sin^2 \theta - \cos^2 \theta}$

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185. If $\sec \theta + \tan \theta = \frac{1}{2}$ then find $\sin \theta$ value.

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186. $\tan 26^\circ / \cot 64^\circ$ value.

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187. $1/1 - \sin \theta + 1/1 + \sin \theta =$

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

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189. $\sin 240^\circ + \sin 120^\circ =$

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Exercise

1. In right angle triangle ABC, 8cm ,15 cm and 17 cm are the length of AB,BC and CA respectively , Then find $\sin A$, $\cos A$ and $\tan A$.



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2. In a right angle triangle ABC with right angle at B , in which $a = 24$ units , $b = 25$ units and $\angle BAC = \theta$, then find $\sin A \tan A$ ($A < 90^\circ$)



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3. If $\cos A = \frac{12}{13}$, then find $\sin A$ and $\tan A$ ($A < 90^\circ$)



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4. If $12 \tan A = 5$, then find $\sin A$ and $\cos A$.



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5. If $15 \cot A = 8$, find $\sin A$ and $\sec A$.

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6. If $\angle A$ and $\angle P$ are acute angles such that $\sin A = \sin P$ then prove that $\angle A = \angle P$

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7. If $\frac{2 \sin \theta}{1 + \cos \theta + \sin \theta} = x$, find the value of $\frac{1 - \cos \theta + \sin \theta}{1 + \sin \theta}$

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8. If $\sin \theta = \frac{a}{b}$, find $\sec \theta + \tan \theta$ in terms of a and b.

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9. If $3 \cot A = 4$, check whether $(1 - \tan^2 A)/(1 + \tan^2 A) = \cos^2 A - \sin^2 A$ or not.

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10. Evaluate the following:

$\tan 45^\circ \cdot \cos 30^\circ \cdot \operatorname{cosec} 60^\circ$.

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11. Evaluate the following:

$$\tan^2 60^\circ + \cot^2 45^\circ - \sin 30^\circ$$

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12. Evaluate the following:

$$\sin 30^\circ + \cos^2 30^\circ - \cot^2 45^\circ.$$

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13. $\cos 0^\circ + \sin 90^\circ + \sqrt{2}\sin 45^\circ$ విలువ

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14. Evaluate the following:

$$\tan^2 60^\circ + 2 \tan^2 45^\circ.$$

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15. Evaluate the following:

$$\tan^2 60^\circ + 4 \cos^2 45^\circ + 3 \sec^2 30^\circ.$$

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16. Evaluate $\sin 60^\circ \cos 30^\circ - \sin 30^\circ \cos 60^\circ$, What is the value of $\sin(60^\circ - 30^\circ)$ What can you conclude ?

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17. Is it right to say $\cos(60^\circ - 30^\circ) = \cos 60^\circ \cdot \cos 30^\circ + \sin 60^\circ \cdot \sin 30^\circ$?

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18. Is it right to say that $\cos(A + B) = \cos A + \cos B$. Justify your answer.

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19. In a right angled triangle ABC, right angled at B, $\angle ACB = \theta$, AB = 4 cm and BC = 2 cm.

Find the value of $\sin \theta$ and $\tan \theta$.

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20. In a right angled triangle ABC, right angled at C, if $\tan A = 1$, then verify that $2 \sin A \cdot \cos A = 1$.

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21. Evaluate:

$$\frac{\sin 24}{\cos 66}$$

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22. Evaluate:

$$\frac{\cos 18}{\sin 72}$$

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23. Evaluate:

$$\frac{\sin 35}{\cos 55}$$



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24. Evaluate:

$$\frac{\tan 10}{\cot 80}$$



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25. Evaluate:

$$\sec 21 / \cos 69$$



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26. $\cos 15^\circ - \cos 75^\circ =$

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27. $\cos 23^\circ - \sec 67^\circ$

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28. $\sec 70^\circ \cdot \sin 20^\circ - \cos 70^\circ \cdot \cos 20^\circ$

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29. $\tan 22^\circ - \tan 68^\circ$

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30. If $\sec 4A = \operatorname{cosec}(A - 20^\circ)$, where $4A$ is an acute angle, find the value of A .

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31. Express:

$\sin 67^\circ + \cos 75^\circ$ in terms of angles between 0° and 45° .

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32. Express:

$\sec 76^\circ + \operatorname{cosec} 52^\circ$ in terms of angles between 0° and 45° .

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33. Express:

$\tan 65^\circ + \cot 49^\circ$ in terms of angles between 0° and 45°



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34. If A , B and C are interior angles of triangle ABC , then

show that
$$\sin \left(\frac{B + C}{2} \right) = \frac{\cos(A)}{2}$$



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35. If A , B and C are interior angles of triangle ABC , then

show that
$$\sin \left(\frac{B + C}{2} \right) = \frac{\cos(A)}{2}$$



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36. If $\tan \theta + \cot \theta = 2$, find the value of $\tan^2 \theta + \cot^2 \theta$.

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37. Show that $(\cot A + \tan B)/(\cot B + \tan A) = \cot A \cdot \tan B$.

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38.
$$\left(\frac{1 + \sin \theta - \cos \theta}{1 + \sin \theta + \cos \theta} \right)^2 =$$

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39. Show that $\frac{\cot A - \cos A}{\cot A + \cos A} = \frac{\cos eA - 1}{1 + \cos eA}$

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40. show that $1 + \left(\frac{\cot^2 \theta}{1 + \cos e\theta} \right) = \cos e\theta$

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41. show that $\frac{1 + \cos \theta - \sin^2 \theta}{(1 + \cos \theta)\sin \theta} = \cot \theta$

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42. Show that $\frac{1 + \sin \theta}{\cos \theta} + \frac{\cos \theta}{1 + \sin \theta} = 2 \sec \theta$

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43. Prove that $\frac{(1 + \tan^2 \theta) \cot \theta}{\sec^2 \theta} = \tan \theta$

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44. Prove that $\frac{1 + \sec \theta}{\sec \theta} = \frac{\sin^2 \theta}{1 - \cos \theta}$

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45. Prove that $\frac{\cos A}{1 - \tan A} + \frac{\sin A}{1 - \cot A} = \sin A + \cos A$

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46. If $5 \tan \theta = 4$, then the value of $\frac{5 \sin \theta - 3 \cos \theta}{5 \sin \theta + 3 \cos \theta}$ is

A. 0

B. 1

C. $\frac{1}{7}$

D. $\frac{2}{7}$

Answer:



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47. The value of $\frac{2\tan 30^\circ}{1 + \tan^2 30^\circ} =$

A. $\sin 60^\circ$

B. $\cos 60^\circ$

C. $\tan 60^\circ$

D. $\sin 30^\circ$

Answer:



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48. The value of $\sin 45^\circ + \cos 45^\circ$ is

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

B. $\sqrt{2}$

C. $\frac{\sqrt{3}}{2}$

D. 1

Answer:



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49. $\tan \theta$ is not defined when θ is

A. 90°

B. 60°

C. 30°

D. 0°

Answer:



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50. $\tan 135^\circ$

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

B. $\sqrt{3}$

C. $-\sqrt{3}$

D. -1

Answer:



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51. $\sin (A-B) = \frac{1}{2}$, $\cos (A+B) = \frac{1}{2}$, '0^(0)'B` అయిన A మరియు B విలువలు కనుక్కోండి.

A. 60°

B. 15°

C. 30°

D. 45°

Answer:

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52. $\sin (A-B) = \frac{1}{2}$, $\cos (A+B) = \frac{1}{2}$, '0^(0)B' అయిన A మరియు B విలువలు కనుక్కోండి.

A. 15°

B. $-\sin \theta$

C. $\sin \theta$

D. $\cos \theta$

Answer:

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53. If $\alpha + \beta = 90^\circ$ and $\alpha = 2\beta$, then $\cos^2 \alpha + \sin^2 \beta =$
.....

A. 1

B. 0

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

D. 2

Answer:

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54. $\cos^2 0^\circ + \cos^2 60^\circ =$

A. $\frac{5}{4}$

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

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

D. $\frac{\sqrt{3}}{2}$

Answer:



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55. $\cot(270^\circ - \theta) =$

A. $-\tan \theta$

B. $\tan \theta$

C. $\cot \theta$

D. $-\cot \theta$

Answer:



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56. $\frac{1 - \tan^2 30^\circ}{1 + \tan^2 30^\circ} = \dots\dots\dots$

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

B. 1

C. 0

D. 2

Answer:



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57. $\cos^6 \theta + \sin^6 \theta =$

A. $1 + \sin^3 \theta \cos^3 \theta$

B. $1 - 3 \sin^2 \theta \cos^2 \theta$

C. $1 - 3 \sin^3 \theta \cos^3 \theta$

D. $1 + 3 \sin^3 \theta \cos^3 \theta$

Answer:



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58. $\cos 12^\circ - \sin 78^\circ = \dots\dots\dots$

A. 1

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

C. 0

D. -1

Answer:



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59. If $\sqrt{3} \tan \theta = 1$ then $\theta =$

A. 60°

B. 90°

C. 45°

D. 30°

Answer:

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60. If $\sec \theta + \tan \theta = \frac{1}{2}$, then $\sec \theta = \dots\dots\dots$

A. 1

B. -1

C. $\frac{5}{4}$

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

Answer:

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61. $\cos(90 - \theta) =$

A. $\cos \theta$

B. $\tan \theta$

C. $\cos ec \theta$

D. $\sin \theta$

Answer:



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62. The value of $\sin^2 60^\circ - \sin^2 30^\circ$

A. $\frac{1}{4}$

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

C. $\frac{3}{4}$

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

Answer:



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63. If $\sec\theta = 2$ and $\cot\theta = (\sqrt{3})^p$ where θ is an acute angle, then the value of 'p' is

A. 2

B. 1

C. 0

D. $\sqrt{3}$

Answer:





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64. If $\sec 2A = \operatorname{cosec}(A - 27)$, when $2A$ is an acute angle, then the measure of $\angle A$ is

A. 35°

B. 37°

C. 39°

D. 21°

Answer:



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65. If P , Q and R are interior angle of a $\triangle PQR$, then

$\tan\left(\frac{P + Q}{2}\right)$ equals

A. $\sin\left(\frac{R}{2}\right)$

B. $\cos\left(\frac{R}{2}\right)$

C. $\cot\left(\frac{R}{2}\right)$

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

Answer:



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66. If $\sin(x - 20)^\circ = \cos(3x - 10)^\circ$, then 'x' is

A. 60

B. 30

C. 45

D. 35.5

Answer:



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67. $\frac{1}{\sec \theta}$, $0 \leq \theta \leq 90^\circ$ యొక్క గరిష్ట విలువ

A. 1

B. 2

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

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

Answer:



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68. The value of $\cos^2 17^\circ - \sin^2 73^\circ$ is

A. 1

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

C. 0

D. -1

Answer:



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69. If $A = 30^\circ$, then $\sin 2A$ equals

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

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

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

D. 1

Answer:



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70. If $\frac{1}{2}\tan^2 45^\circ = \sin^2 A$ and 'A' is acute then the value of

A is

A. 60°

B. 45°

C. 30°

D. 15°

Answer:



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71. $\sin(45^\circ + \theta) - \cos(45^\circ - \theta) =$

A. $\sin \theta$

B. 0

C. 1

D. $2 \cos \theta$

Answer:



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72. If $\cos 2\theta = \sin 4\theta$, here 2θ and 4θ are acute angles, then the value of θ is

A. 60°

B. 45°

C. 15°

D. 30°

Answer:



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73. From the below figure $ON = x$, $PN = y$ and $OP = r$,

$\angle PON = \theta$ and $\angle PON = 90^\circ$, $\sin \theta =$



A. $\frac{x}{r}$

B. $\frac{y}{x}$

C. $\frac{r}{x}$

D. $\frac{y}{r}$

Answer:



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74. $\tan \theta =$

A. $\frac{x}{y}$

B. $\frac{y}{x}$

C. $\frac{r}{x}$

D. $\frac{r}{y}$

Answer:

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75. $\sin^2 75^\circ + \cos^2 75^\circ =$

A. 75

B. 150

C. $\tan^2 75^\circ$

D. 1

Answer:

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76. Evaluate the following :

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

A. $2 \sin^2 \theta + \cos^2 \theta$

B. 2

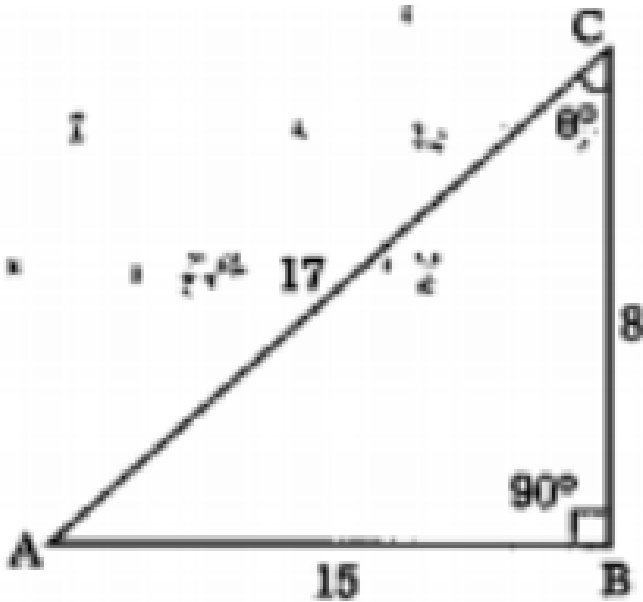
C. $2 \sin^2 \theta + 4 \cos^2 \theta$

D. $2 \sin^2 \theta$

Answer:



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77.

In $\triangle ABC$, $\angle B = 90^\circ$, $\angle C = \theta$. From the figure, $\tan \theta =$

- A. $\frac{8}{17}$
- B. $\frac{15}{8}$
- C. $\frac{8}{15}$
- D. $\frac{17}{15}$

Answer:

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78. $\cos 0^{\circ} + \sin 90^{\circ} + \sqrt{2}\sin 45^{\circ}$ విలువ

A. 0

B. $2 + \sqrt{2}$

C. 4

D. 3

Answer:

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79. Value of $\cos 240^{\circ} =$

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

B. $-\frac{\sqrt{3}}{2}$

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

D. none

Answer:



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80. $\tan \theta + \cot \theta = 2$ అయితే $\tan^2 \theta + \cot^2 \theta =$

A. 4

B. 2

C. 6

D. 1

Answer:

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81. $(1 + \tan^2 60) ^2 = \dots\dots\dots$

A. 1

B. 2

C. 4

D. 16

Answer:

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82. $\cot(270^\circ - \theta) =$

A. $-\cos \theta$

B. $-\sin \theta$

C. $\sin \theta$

D. $\cos \theta$

Answer:

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83. In right angle $\triangle ABC$, $\angle B = 90^\circ$, $\tan c = \frac{5}{12}$ then the length of hypotenuse is .

A. 16

B. 13

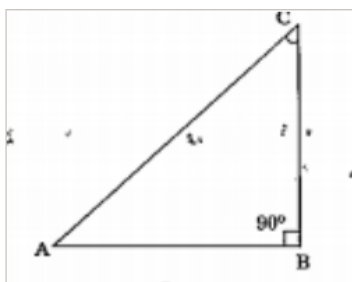
C. 21

D. 17

Answer:

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84.



If $\sin C = \frac{3}{5}$, then $\cos A =$

A. $\frac{3}{5}$

B. $\frac{4}{5}$

C. $\frac{5}{4}$

D. $\frac{5}{3}$

Answer:



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85. $\cot(270^\circ - \theta) =$

A. $-\tan \theta$

B. $\tan \theta$

C. $\cot \theta$

D. $-\cot \theta$

Answer:



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86. $\sin \theta \cdot \cos \theta = k$ అయిన $\sin \theta + \cos \theta =$

A. k^2

B. $k^2 - 1$

C. $\sqrt{2k^2 - 1}$

D. $\sqrt{1 + 2k}$

Answer:



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87. $\sin^2 47^\circ + \sin^2 43^\circ =$

A. 0

B. infinity

C. 1

D. can not be determined

Answer:



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88. $\sec(360^\circ - \theta) =$

A. $\cos \theta$

B. $\sec \theta$

C. $\cos ec\theta$

D. $\cot \theta$

Answer:



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89. $\frac{1}{\sec^2 A} + \frac{1}{\cos ec^2 A} = \dots\dots\dots$

A. 2

B. 1

C. $\tan^2 A + \cos^2 A$

D. 0

Answer:

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90. $\tan 240^\circ =$

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

B. $\sqrt{3}$

C. $-\sqrt{3}$

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

Answer:

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91. If $\sin \theta = \frac{1}{2}$, then $\cos \left(\frac{3\theta}{2} \right)$

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

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

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

D. $\frac{2}{\sqrt{3}}$

Answer:



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92. If the angle in a triangle are in the ratio of 1:2:3, then the smallest angle in radius is

A. $\frac{\pi}{3}$

B. $\frac{\pi}{6}$

C. $2\frac{\pi}{3}$

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

Answer:

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93. $\sin A = \frac{1}{\sqrt{2}}$ అయితే $\tan A$

A. 3

B. 4

C. 1

D. $\sqrt{2}$

Answer:

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94. $\cos(A + B) = 0$, $\cos B = \frac{\sqrt{3}}{2}$ అయిన $A =$

A. 60°

B. 180°

C. 15°

D. 115°

Answer:



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95. $\sin 180^\circ =$

A. 0

B. 1

C. -1

D. ∞

Answer:



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96. $\cos \theta = \frac{1}{2}$ అయిన $\cos \theta / 2 =$

A. $\frac{1}{4}$

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

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

D. 1

Answer:



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97.

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

A. $\cos 2A$

B. $\cos 2B$

C. $\sin 2A$

D. $\sin 2B$

Answer:



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98. $\cos 300^\circ =$

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

B. 1

C. 0

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

Answer:



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99. If $\sin(A + B) = 1$ and $\sin B = \frac{1}{2}$ then $A =$

A. 30°

B. 45°

C. 60°

D. 90°

Answer:



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100. If $\sqrt{3} \tan \theta = 1$ then $\theta =$

A. 30°

B. 45°

C. 60°

D. 90°

Answer:

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101. $\cos 60^\circ * \cos 90^\circ =$

A. ∞

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

C. 0

D. 3

Answer:

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102. $\tan \theta = \sqrt{3}$ అయితే $\sec \theta$ విలువ

A. 2

B. -2

C. 4

D. 5

Answer:



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103. If $3 \cot \theta = 5$, then $\frac{5 \sin \theta - 3 \cos \theta}{5 \sin \theta + 3 \cos \theta}$

A. -1

B. 1

C. 7

D. 0

Answer:

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104. $(1 + \tan^2 \theta) \cos^2 \theta = \dots\dots$

A. 1

B. 0

C. 8

D. 14

Answer:

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105. $(\sec^2 \theta - 1)(\operatorname{cosec}^2 \theta - 1) = \dots\dots\dots$

A. 2

B. -1

C. 3

D. -4

Answer:

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106. $\cot^2 \theta - \frac{1}{\sin^2 \theta} =$

A. 4

B. -3

C. 2

D. 1

Answer:



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107. If $\cos \theta \cdot \sin \theta = \frac{1}{2}$, then $\theta = \dots\dots\dots$

A. 1

B. -1

C. 3

D. 4

Answer:



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108. If $\cos \theta = -\cos \theta$, then θ in radian measure is.....

A. π^c

B. $\frac{\pi^c}{2}$

C. $\frac{\pi^c}{3}$

D. $\frac{\pi^c}{7}$

Answer:



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109. If $\sin A = \frac{3}{5}$, then $\sin(90 + A) = \dots\dots\dots$

A. $\frac{4}{5}$

B. $\frac{5}{4}$

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

D. $\frac{2}{3}$

Answer:



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110. $\sqrt{(\sec \theta + 1)(\sec \theta - 1)} =$

A. $\cot \theta$

B. $\tan \theta$

C. $\cos \theta$

D. $\sin \theta$

Answer:



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111. $\sqrt{\sec^2 \theta - \tan^2 \theta + \cot^2 \theta} = \dots\dots\dots$

A. $-\cos \theta$

B. 1

C. $\sec \theta$

D. $\cos ec \theta$

Answer:

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112. $\cos 150^\circ = \dots\dots\dots$

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

B. $-\sqrt{3}$

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

D. none

Answer:

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113. $\sin^2 75^\circ + \cos^2 75^\circ =$

A. 3

B. 2

C. 4

D. 1

Answer:



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114. $\sin 240^\circ + \sin 120^\circ =$

A. 0

B. -1

C. 3

D. none

Answer:

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115. $\cos e\theta + \cot \theta = 2$ అయిన $\cos e\theta - \cot \theta =$

A. -1

B. 2

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

D. 3

Answer:

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116. If $\sec A + \tan A = 1/3$, then $\sec A - \tan A = \dots\dots\dots$

A. 4

B. 1

C. -3

D. 3

Answer:

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117. $\sin 30^\circ + \cos 60^\circ = \dots\dots\dots$

A. 1

B. 4

C. 3

D. none

Answer:



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118. $(\cos A + \sin A)^2 + (\cos A - \sin A)^2 = \dots\dots\dots$

A. 1

B. 2

C. 4

D. none

Answer:



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119. $\sin 450^\circ = \dots\dots\dots$

A. 4

B. 3

C. -1

D. 1

Answer:



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120. $\cos(A + B) =$

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

B. $\cos A \sec B - \sin A \sin B$

C. $\cos A \cos B + \sin A \sec B$

D. none

Answer:

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121. $\tan(A - B) =$

A. $\tan A - \cos B$

B. $\tan B - \tan A$

C. $\frac{\tan B - \tan A}{1 + \tan A + \tan B}$

D. none

Answer:



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122. $\tan(360 - \theta) = \dots\dots\dots$

A. $\sin \theta$

B. $\sec \theta$

C. $\tan \theta$

D. $-\tan \theta$

Answer:

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

A. $2 + \sqrt{3}$

B. $2 - \sqrt{3}$

C. $\sqrt{3} - 1$

D. none

Answer:

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124. $\cos 110^\circ \cdot \cos 70^\circ - \sin 110^\circ \cdot \sin 70^\circ = \dots\dots\dots$

A. 4

B. 1

C. -1

D. 3

Answer:



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125. Express $\tan \theta$, in terms of $\sin \theta$

A. $\frac{\cos \theta}{1 - \sin \theta}$

B. $\frac{\sin \theta}{\sqrt{1 - \sin^2 \theta}}$

C. $\frac{\sin \theta}{1 + \cos \theta}$

D. none

Answer:

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126. $\cos ec 60^\circ \cdot \sec 60^\circ = \dots\dots\dots$

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

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

C. $\frac{4}{3}$

D. $\frac{4}{\sqrt{3}}$

Answer:

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127. $\cos(180 - \theta) = \dots\dots\dots$

A. $-\cos \theta$

B. $\cos \theta$

C. $\sec \theta$

D. none

Answer:

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128. $\sin 2A = \dots\dots\dots$

A. $2 \sin A \cos A$

B. $\cos A \sin A$

C. $\sin^2 A$

D. $\cos^2 A$

Answer:



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

A. $-\tan \theta$

B. $-\sin \theta$

C. $\sec \theta$

D. $\cot \theta$

Answer:



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130. Evaluate the following :

$$(\sec^2 \theta - 1)(\operatorname{cosec}^2 \theta - 1)$$

A. 3

B. -1

C. 4

D. 1

Answer:



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131. $2\sin 45^\circ \cdot \cos 45^\circ = \dots\dots\dots$

A. 1

B. 4

C. -1

D. none

Answer:

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132. If $\cot \theta = x$, then $\operatorname{cosec} \theta = \dots\dots\dots$

A. $\sqrt{2x + 1}$

B. $\sqrt{1 + x}$

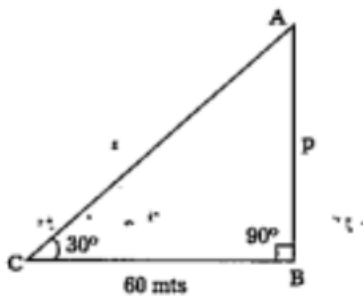
C. $\sqrt{x^2 + 1}$

D. none

Answer:

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133. In the figure, $AB = \dots\dots\dots$



A. $16\sqrt{3}$

B. $10\sqrt{3}$

C. $9\sqrt{3}$

D. $20\sqrt{3}$

Answer:

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134. $\sin 45^\circ \cdot \cos 45^\circ + \sqrt{3}\sin 60^\circ = \dots\dots\dots$

A. 2

B. -2

C. 3

D. none

Answer:

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135. $\frac{\sqrt{\sec^2 A - 1}}{\sec A} = \dots\dots\dots$

A. $\sec A$

B. $-\cos A$

C. $\cos A$

D. $\sin A$

Answer:



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136. If $\alpha + \beta = 90^\circ$ and $\alpha = 2\beta$, then $\cos^2 \alpha + \sin^2 \beta =$
.....

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

B. -1

C. 2

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

Answer:



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137. $\tan 30^\circ + \cot 30^\circ = \dots\dots\dots$

A. $\frac{4}{\sqrt{3}}$

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

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

D. none

Answer:

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138. $\sin \theta = \frac{a}{b}$ అయితే $\tan \theta =$

A. $\frac{a}{\sqrt{b^2 + 1}}$

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

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

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

Answer:

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139. $\tan \theta = \frac{1}{\sqrt{3}}$ అయిన $\cos \theta =$

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

B. $\sqrt{3}$

C. $\frac{2}{\sqrt{3}}$

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

Answer:



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140. $5 \sin A = 3$ అయిన $\sec^2 A - \tan^2 A =$

A. 3

B. -1

C. 4

D. 1

Answer:



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141. $\sin(-\theta) =$

A. $\cos \theta$

B. $-\tan \theta$

C. $\sec \theta$

D. $-\sin \theta$

Answer:



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142. $\cos(-\theta) = \dots\dots\dots$

A. $\sec \theta$

B. $-\cos \theta$

C. $\cos \theta$

D. 1

Answer:



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143. $\sin(180 - \theta) = \dots\dots\dots$

A. $\cos \theta$

B. $\sin \theta$

C. $\tan \theta$

D. 0

Answer:

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144. $\operatorname{cosec}(270 - \theta) = \dots\dots\dots$

A. $\cos \theta$

B. $\sin \theta$

C. $-\sin \theta$

D. none

Answer:



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145. $\tan(360 - \theta) = \dots\dots\dots$

A. $-\tan \theta$

B. $\tan \theta$

C. $\sec \theta$

D. $\cos \theta$

Answer:

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146. $\cos ec(270 - \theta) = \dots\dots\dots$

A. $\sec \theta$

B. $-\sec \theta$

C. $\tan \theta$

D. none

Answer:

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147. $\sec(90 + \theta) = \dots\dots\dots$

A. $\tan \theta$

B. $\cos e\theta$

C. $-\cos \theta$

D. $-\cos e\theta$

Answer:

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148. Value of $\cos 240^\circ =$

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

B. -1

C. $\frac{2}{3}$

D. -3

Answer:



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149. $\sec 240^\circ = \dots\dots\dots$

A. 3

B. -1

C. 2

D. -2

Answer:



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150. $\sin^2 47^\circ + \sin^2 43^\circ =$

A. 1

B. -1

C. 3

D. none

Answer:

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151. If $\cos ec\theta - \cot \theta = 4$, then $\cos ec\theta + \cot \theta = \dots\dots\dots$

A. 1

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

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

D. $\frac{1}{4}$

Answer:



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152. The value of $\tan \theta$ in terms of $\cos ec\theta$ is.....

A. $\frac{1}{\sqrt{\cos ec^2\theta - 1}}$

B. $\frac{1}{\sqrt{1 + \cos ec\theta}}$

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

D. none

Answer:



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153. $\cos^2 \theta / \cot \theta - \cot \theta =$

A. $\cot \theta$

B. $\sec \theta$

C. $\tan \theta$

D. none

Answer:



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154. $\frac{1 - \tan^2 30^\circ}{1 + \tan^2 30^\circ} = \dots\dots\dots$

A. -2

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

C. 1

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

Answer:

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155. $\frac{1}{\sec^2 A} + \frac{1}{\cos e} c^2 A =$

A. -1

B. 1

C. 3

D. 4

Answer:



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156. $\tan \theta \cdot \cot \theta = \sec \theta \cdot x$ అయిన $x =$

A. $\cos \theta$

B. $-\cos \theta$

C. $\tan \theta$

D. none

Answer:

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157. $\sin(A + B) = \frac{\sqrt{3}}{2}$, $\cos B = \frac{\sqrt{3}}{2}$ అయిన A విలువ

A. 70°

B. 45°

C. 60°

D. 30°

Answer:

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158. If $\sec \theta + \tan \theta = \frac{1}{2}$ then find $\sin \theta$ value.

A. $\frac{2}{13}$

B. $\frac{1}{13}$

C. $\frac{12}{13}$

D. $\frac{13}{2}$

Answer:



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159. $\sec \theta = \cos ec \theta$ అయిన θ విలువ

A. $\frac{\pi^c}{2}$

B. $\frac{\pi^c}{4}$

C. $\frac{\pi^c}{3}$

D. $\frac{\pi^c}{12}$

Answer:

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160. Maximum value of $\sin \theta + \cos \theta = \dots\dots\dots$

A. 3

B. $\sqrt{3}$

C. 2

D. $\sqrt{2}$

Answer:

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161. Maximum value of $\cos \theta = \dots\dots\dots$

A. 1

B. -1

C. 2

D. 0

Answer:

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162. Minimum and maximum value of $\tan \theta = \dots\dots\dots$

A. $(-\infty, \infty)$

B. $(-\infty, 0)$

C. (3, 2)

D. (1, -1)

Answer:



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163. Find the value of $\frac{\sin^4 \theta - \cos^4 \theta}{\sin^2 \theta - \cos^2 \theta}$

A. 2

B. -1

C. 1

D. none

Answer:

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164. $\left| \frac{\tan \theta \sec \theta}{\sec \theta \tan \theta} \right| = \dots = \dots$

- A. -1
- B. -4
- C. 1
- D. none

Answer:

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165. $\frac{\sqrt{\sec^2 \theta - 1}}{\sec \theta}$

A. $-\tan \theta$

B. $\cos \theta$

C. $\sin \theta$

D. none

Answer:



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166. If $\sin A = \frac{1}{\sqrt{2}}$ then $\tan A =$

A. 4

B. 3

C. -1

D. 1

Answer:



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167. $\tan \theta$ is not defined when θ is

A. 0°

B. 70°

C. 90°

D. 20°

Answer:



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168. If $\cos ec\theta = \frac{25}{7}$, then find $\cot \theta$

A. $\frac{4}{7}$

B. $\frac{7}{24}$

C. $\frac{4}{23}$

D. $\frac{24}{7}$

Answer:



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169. Evaluate

$$\tan 26^\circ \tan 64^\circ$$

A. 1

B. -1

C. 3

D. 7

Answer:



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170. If $\tan 2A = \cot(A - 18^\circ)$ where $2A$ is an acute angle

then $A = \dots\dots\dots$

A. 116°

B. 20°

C. 16°

D. 36°

Answer:

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171. $\sin(90 - \phi) = \dots\dots\dots$

A. $\cos \phi$

B. $\sin \phi$

C. $-\cos \phi$

D. 0

Answer:

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172. In $\triangle ABC$, $\sin\left(\frac{B+C}{2}\right) = \dots\dots\dots$

A. $\cos\left(\frac{A}{2}\right)$

B. $\cos\left(\frac{C}{2}\right)$

C. $\tan\left(\frac{A}{2}\right)$

D. 1

Answer:

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173. Evaluate $\frac{\sec 35^\circ}{\cos 55^\circ}$

A. -3

B. 8

C. 4

D. 1

Answer:



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174. $\sin \frac{\pi}{4} + \cos 45^\circ$

A. 2

B. $\sqrt{2}$

C. -1

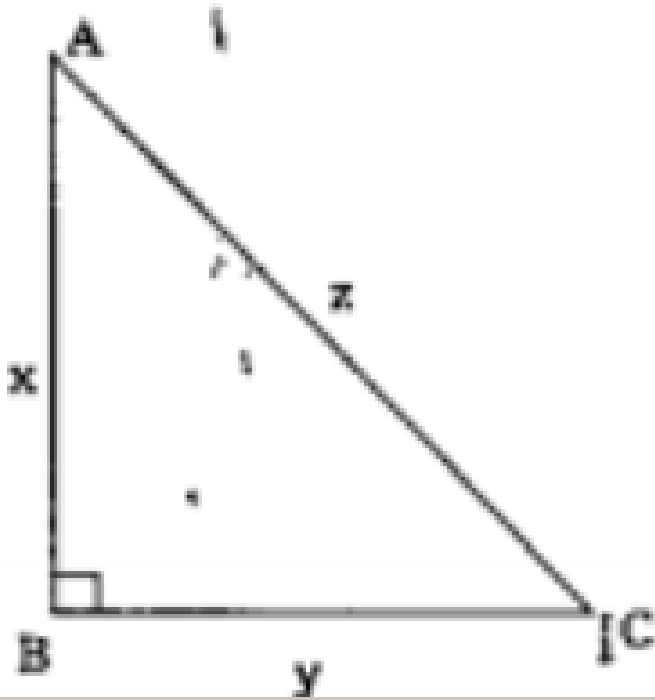
D. 0

Answer:



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175. From the figure, $\sin C = \dots\dots\dots$



A. x/z

B. z/x

C. y/z

D. none

Answer:



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176. $\sec \theta$ is not defined if $\theta = \dots\dots\dots$

A. 0°

B. 90°

C. 30°

D. 45°

Answer:



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177. $(1 + \tan^2 60)^2 = \dots\dots\dots$

A. 1

B. 10

C. 16

D. 12

Answer:

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178. Reciprocal of $\cot A = \dots\dots\dots$

A. $\sin A$

B. $\sin^2 A$

C. $\sec^2 A$

D. $\tan A$

Answer:



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179. Trigonometry was introduced by

A. Cantor

B. Cayley

C. Hipparchus

D. none

Answer:

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180. If $\tan A = \frac{3}{4}$ then $\sec^2 A - \tan^2 A = \dots\dots\dots$

A. 4

B. 3

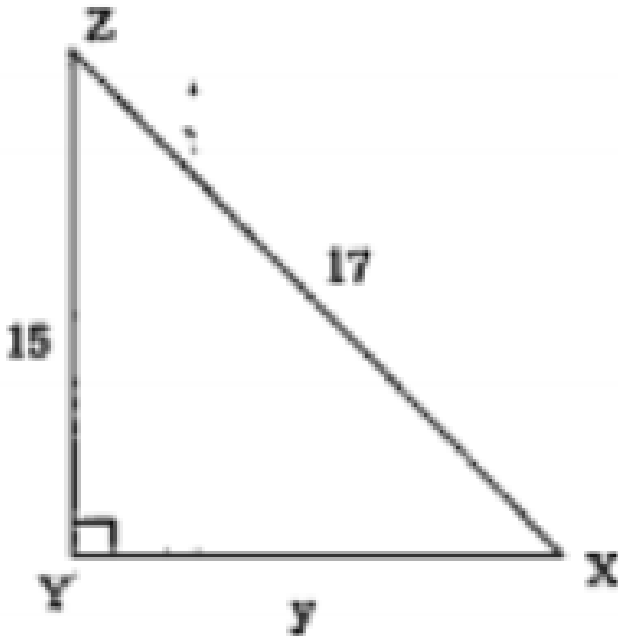
C. -1

D. 1

Answer:

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181. In the figure $\tan X = \dots\dots\dots$



- A. $\frac{8}{5}$
- B. $\frac{15}{8}$
- C. $\frac{11}{3}$
- D. $\frac{12}{7}$

Answer:



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182. From the adjacent figure, $\frac{c}{a} = 29/21$ represents



A. $\cos \theta$

B. $\cos ec \theta$

C. $\cot \theta$

D. $\sin \theta$

Answer:



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183. From the adjacent figure, value of $\sin^2 A + \cos^2 A$



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

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

C. $\frac{\sqrt{3}}{2}$

D. 1

Answer:



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184. In a right angled triangle ABC, right angled at B, $\angle ACB = \theta$, AB = 12 cm and BC = 5 cm.

Find the value of $\cos \theta$ and $\tan \theta$.



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185. Express $\sin 75^\circ + \cos 67^\circ$ in terms of angles between 0 and 45°

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186. Show that $\frac{1 + \cos \theta}{\sin \theta} + \frac{\sin \theta}{1 + \cos \theta} = 2 \operatorname{cosec} \theta$.

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187. If $\cos \theta = a/b$ find $\operatorname{cosec} \theta + \cot \theta$ in terms of a and b .



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188. $\sqrt{\sec^2 \theta + \operatorname{cosec}^2 \theta} = \dots\dots\dots$

A. $\tan \theta + \cot \theta$

B. $\tan \theta - \cot \theta$

C. $\frac{\tan \theta}{\sec \theta}$

D. none

Answer:



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189. $\frac{\cos \theta}{1 - \tan \theta} + \frac{\sin \theta}{1 - \cot \theta} = \dots\dots\dots$

A. $\sec \theta - \tan \theta$

B. $\cos \theta - \sin \theta$

C. $\cos \theta + \sin \theta$

D. none

Answer:



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190. $\frac{\sin \theta - 2 \sin^3 \theta}{2 \cos^3 \theta - \cos \theta} = \dots\dots\dots$

A. $3 \cos \theta$

B. $\cos \theta$

C. $\sec \theta$

D. $\tan \theta$

Answer:

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191. $\sec^2 \theta + \operatorname{cosec}^2 \theta = \dots\dots\dots$

A. $\sec^2 \theta \cdot \operatorname{cosec}^2 \theta$

B. $\cos^2 \theta \cdot \tan^2 \theta$

C. $-\cos^2 \theta$

D. none

Answer:

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192. $(\operatorname{cosec} \theta - \cot \theta) = \dots\dots\dots$

A. $\frac{1 + \cos \theta}{1 - \cos \theta}$

B. $\frac{1 - \cos \theta}{1 + \cos \theta}$

C. $\frac{\sin \theta}{1 + \cos \theta}$

D. $\frac{1 - \cos \theta}{2}$

Answer:

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193. $1/\sec \theta - \tan \theta =$

A. $\sec \theta + \tan \theta$

B. $\sec \theta - \tan^2 \theta$

C. 1

D. -1

Answer:



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

A. $\sin^2 \theta + 1$

B. $\sin^3 \theta$

C. $\sin \theta$

D. $\sin^2 \theta$

Answer:



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195. The value of $\sin 29^\circ - \cos 61^\circ$ is.....

A. 1

B. 0

C. 3

D. 4

Answer:



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196. The value of $\cos^2 17^\circ - \sin^2 73^\circ$ is

A. 3

B. 1

C. 0

D. 4

Answer:



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197. The value of $\sec 70^\circ \cdot \sin 20^\circ + \cos 20^\circ \cdot \csc 70^\circ = \dots\dots\dots$

A. 4

B. 1

C. -2

D. 2

Answer:



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198. The value of $\tan 1^\circ \cdot \tan 2^\circ \cdot \tan 3^\circ \dots \dots \dots \tan 89^\circ$

A. 1

B. -2

C. 3

D. 7

Answer:

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199. In $\triangle ABC$, $\tan\left(\frac{B + C}{2}\right) = \dots\dots\dots$

A. $\tan A$

B. $\sin A$

C. $\cot\left(\frac{A}{2}\right)$

D. $\cos\left(\frac{A}{2}\right)$

Answer:

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200. $\frac{\sin(90 - \theta)\sin\theta}{\tan\theta} - 1 = \dots\dots\dots$

A. $1 - \sin \theta$

B. $-\cos^2 \theta$

C. $\sin \theta$

D. $-\sin^2 \theta$

Answer:

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201. The value of $\cos 1^\circ \cdot \cos 2^\circ \cdot \cos 3^\circ \dots \dots \dots \cos 180^\circ$
=.....

A. 4

B. 1

C. 0

D. none

Answer:

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202. $\tan 5^\circ \times \tan 30^\circ \times 4\tan 85^\circ = \dots\dots\dots$

A. $\frac{4}{\sqrt{3}}$

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

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

D. $\frac{\sqrt{3}}{7}$

Answer:

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203. $\frac{1 - \tan^2 45^\circ}{1 + \tan^2 45^\circ} = \dots\dots\dots$

A. 3

B. 4

C. 1

D. none

Answer:



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204. $\sec A = \operatorname{cosec} B$, then A and B are Angles.

A. supplementary

B. complementary

C. acute

D. 0

Answer:



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205. $\sec^4 A - \sec^2 A = \dots\dots\dots$

A. $\tan^4 A + \tan^2 A$

B. $\tan^4 A$

C. $1 - \tan^4 A$

D. none

Answer:



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206. If $\sin \theta + \sin^2 \theta = 1$, then $\cos^2 \theta + \cos^4 \theta =$

A. 4

B. 3

C. -1

D. 1

Answer:



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207. If $\sin \theta = 1/2$, then $\cot \theta$

A. 1

B. $\sqrt{2}$

C. $\sqrt{3}$

D. 2

Answer:



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208. If $\tan(15^\circ + B) = \sqrt{3}$, then $B = \dots\dots\dots$

A. 60°

B. 45°

C. 15°

D. none

Answer:



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209. If $\tan \theta = 1$, then $\cos \theta = \dots\dots\dots$

A. 1

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

C. $\sqrt{2}$

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

Answer:



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