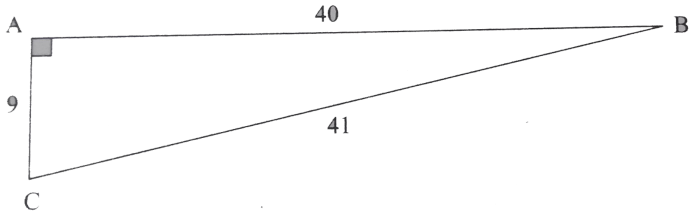
MATHS

BOOKS - SURA MATHS (TAMIL ENGLISH)

TRIGONOMETRY

Exercise 6 1

1. From the given figure, find all the trigonometric ratios of angle B.



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2. From the given figure, find the values of

sin B

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3. From the given figure, find the values of

sec B

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4. From the given figure, find the values of

cot B

Watch Video Solution

5. From the given figure, find the values of

cos C

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6. From the given figure, find the values of

tan C

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7. From the given figure, find the values of

cos C

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8. If $2\cos\theta = \sqrt{3}$, then find all the trigonometric ratios of angle θ.

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9. If $\cos A = \frac{3}{5}$, then find the value of $\frac{\sin A - \cos A}{2 \tan A}$

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10. If $\cos A = \frac{2x}{1 + x^2}$, then find the values of sin A and tan A in terms of x.

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11. If $\sin \theta = \frac{a}{\sqrt{a^2 + b^2}}$, then show that $b \sin \theta = a \cos \theta$.

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12. If $3 \cot A = 2$, then find the value of $\frac{4 \sin A - 3 \cos A}{2 \sin A + 3 \cos A}$

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13. If $\cos\theta : \sin\theta = 1:2$, then find the value of $\frac{8\cos\theta - 2\sin\theta}{4\cos\theta + 2\sin\theta}$

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14. A boy standing at point O finds his kite flying at a point P with distance OP = 25m. It is at a height of 5m from the ground . When the thread is extended by 10 m from P, it reaches a point Q. What will be the height QN of the kite from the ground? (use trigonometric ratios)

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Exercise 6 2

1. Find the value of the following:

$$\frac{\tan 45^\circ}{\text{cosec}30^\circ} + \frac{\sec 60^\circ}{\cot 45^\circ} - \frac{5\sin 90^\circ}{2\cos 0^\circ}$$

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2. Find the value of the following:

$$(\sin 90^\circ + \cos 60^\circ + \cos 45^\circ) \times (\sin 30^\circ + \cos 0^\circ - \cos 45^\circ)$$

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3. Find the value of the following:

$$\sin^2 30^\circ - 2\cos^3 60^\circ + 3\tan^4 45^\circ$$

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4. Verify $\cos 3A = 4\cos^3 A - 3\cos A$, when A = 30°

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5. Find the value of $8 \sin 2x . \cos 4x . \sin 6x$, when $x = 15^\circ$

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Exercise 6 3

1. Find the value of the following:

$$\left(\frac{\cos 47^\circ}{\sin 43^\circ}\right)^2 + \left(\frac{\sin 72^\circ}{\cos 18^\circ}\right)^2 - 2\cos^2 45^\circ$$

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2. Find the value of the following:

$$\frac{\cos 70^\circ}{\sin 20^\circ} + \frac{\cos 59^\circ}{\sin 31^\circ} + \frac{\cos \theta}{\sin(90^\circ - \theta)} - 8\cos^2 60^\circ$$

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3. Find the value of the following:

$$\tan 15^\circ \tan 30^\circ \tan 45^\circ \tan 60^\circ \tan 75^\circ$$

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4. Find the value of

$$\frac{\cot \theta}{\tan(90^\circ - \theta)} + \frac{\cos(90^\circ - \theta)\tan\theta \sec(90^\circ - \theta)}{\sin(90^\circ - \theta)\cot(90^\circ - \theta)\cos ec(90^\circ - \theta)}$$

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Exercise 6 4

1. Find the value of the following :

$\sin 49^\circ$

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2. Find the value of the following :

$\cos 74^\circ 39'$

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3. Find the value of the following :

$\tan 54^\circ 26'$

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4. Find the value of the following :

$\sin 21^\circ 21'$

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5. Find the value of the following :

$\cos 33^\circ 53'$

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6. Find the value of the following :

$\tan 70^\circ 17'$

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7. Find the value of θ if

$\sin\theta = 0.9975$

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8. Find the value of θ if

$\cos\theta = 0.6763$

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9. Find the value of θ if

$\tan\theta = 0.0720$

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10. Find the value of θ if

$\cos\theta = 0.0410$

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11. Find the value of θ if

$\tan\theta = 7.5958$

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12. Find the value of the following :

$\sin 65^\circ 39$+cos24^(@)57'+tan10^(@)10``

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13. Find the value of the following :

$\tan 70^\circ 58' + \cos 15^\circ 26' - \sin 84^\circ 59'$

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14. Find the area of a right triangle whose hypotenuse is 10 cm and one of the acute angle is 24° 24'.

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15. Find the angle made by a ladder of length 5m with the ground, if one of its end is 4m away from the wall and the other end is on the wall.

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16. In the given figure, HT shows the height of a tree standing vertically. From a point P, the angle of elevation of the top of the tree (that is $\angle P$) measures 45° and the distance to the tree is 60 metres. Find the height of the tree.

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Exercise 6 5

1. If $\sin 30^\circ = x$ and $\cos 60^\circ = y$, then $x^2 + y^2$ is

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

B. 0

C. $\sin 90^\circ$

D. $\cos 90^\circ$

Answer:

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2. If $\tan\theta = \cot 37^\circ$, then the value of θ is

A. 37°

B. 53°

C. 90°

D. 1°

Answer:

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3. The value of $\tan 72^\circ . \tan 18^\circ$ is

A. 0

B. 1

C. 18°

D. 72°

Answer:

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4. The value of $\frac{2\tan 30^\circ}{1-\tan^2 30^\circ}$ is equal to

A. $\cos 60^\circ$

B. $\sin 60^\circ$

C. $\tan 60^\circ$

D. $\sin 30^\circ$

Answer:

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Additional Questions And Answers Exercise 6 1

1. Find the six trigonometric ratios of the angle θ using the diagram

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2. If $3\cot\theta = 1$, then find the value of $\dfrac{3\cos\theta - 4\sin\theta}{5\sin\theta + 4\cos\theta}$.

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3. If $\sin\theta = \dfrac{a}{\sqrt{(a^2+b^2+c^2+2bc)}}$, then show that $(b+c)\sin\theta = (a)\cos\theta$.

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4. If $3(\tan\theta) + 4(\sec\theta \times \sin\theta) = 24$. Then find all the trigonometric ratios of the angle θ.

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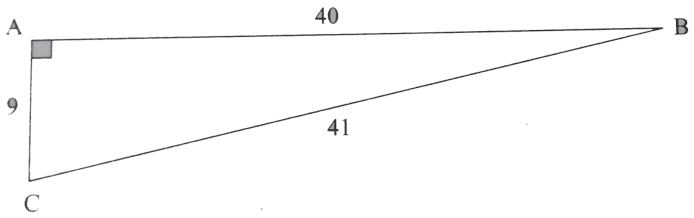
5. From the given figure, find all the trigonometric ratios of angle B.



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Additional Questions And Answers Exercise 6 2

1. Find the value of $\sin 3x . \sin 6x . \sin 9x$ when $x = 10^\circ$

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2. Find the value of

$\cot 15^\circ . \cot 30^\circ . \cot 45^\circ . \cot 60^\circ . \cot 75^\circ$

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Additional Questions And Answers Exercise 6 3

1. Find the value of $\cos 19^\circ 59' + \tan 12^\circ 12' + \sin 49^\circ 20'.$

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2. Given that $\sin\alpha = \frac{1}{\sqrt{2}}$ and $\tan\beta = \sqrt{3}$. Find the value of $\alpha + \beta$.

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3. Find the value of $\frac{\cos 63^\circ 20'}{\sin 26^\circ 40'}$

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Unit Test

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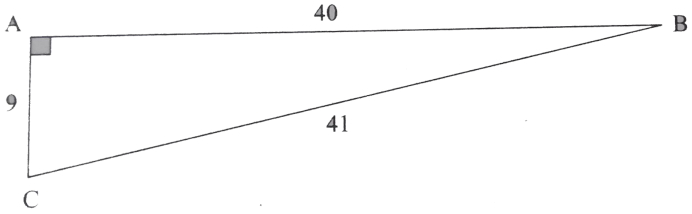

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