MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

TRIGONOMETRIC RATIOS OF CERTAIN ANGLES

Example

1. Find the value of $\dfrac{5\sin^2 30° + 4\cos ec^2 60° - \cot^2 45°}{\sec^2 60° - \tan^2 60°}$

▶ Watch Video Solution

2. ABC is a right angle triangle right angled at C. If angle A= 60º and AC= 6cm . Find CB and AB.

3. If $\theta = 30°$, show that

$$3\sin\theta - 4\sin^3\theta = \sin\theta\cos 2\theta + \cos\theta\sin 2\theta.$$

Exercise

1. Evaluate:$\cos 45\cos 60 - \sin 45\sin 60$

2. Evaluate:$(\cot 60)^2 + (\sin 30)^2 - (\cos 90)^2$

3. Evaluate: $(\cot 30)^2 - 2(\sin 30)^2 - \dfrac{3}{4}(\cos ec45)^2$

4. Evaluate: $\dfrac{\sin 30 + \tan 45 - \cos ec60}{\sec 30 + \cos 60 + \cot 45}$

5. Evaluate: $\dfrac{\cos 30 + \sin 60}{1 + \cos 30 + \sin 60}$

6. Evaluate: $\dfrac{(\sin 30)^2 + (\cos 45)^2 - 4(\sin 30)^2}{2\sin 30 \cos 30 + \tan 45}$

7. Evaluate: $\dfrac{(\tan 60)^2 + 4(\sin 45)^2 + 3(\sec 30)^2 + 5(\cos 90)^2}{\cos 30 + \sin 60 - (\cot 30)^2}$

8. Verify:a.$\sin 60° = \dfrac{2\tan 30°}{1 + \tan^2 30°}$

9. Prove that:$\cos 60 = \dfrac{1 - (\tan 30)^2}{1 + (\tan 30)^2}$

10. Prove that: $\dfrac{\tan 60 - \tan 30}{1 + \tan 60 \tan 30} = \tan 30$

11. Prove that: $\left(\dfrac{1 + \cot 60}{1 - \cot 60}\right)^2 = \dfrac{1 + \cos 30}{1 - \cos 30}$

12. Prove that:

$$\left((\sin 0 + \sin 60)\dfrac{\cos 60 + \tan 45}{\tan 30 + \cot 60}(\cos ec30 - \cos ec90)\right) = \left(\dfrac{9}{8}\right)$$

13. Prove that:

$$\left(\frac{1 + 2\sin 60 \cos 60}{\sin 60 + \cos 60}\right) + \left(\frac{1 - 2\sin 60 \cos 60}{\sin 60 - \cos 60}\right) = \sqrt{3}$$

▶ Watch Video Solution

14. Prove that: $(\sec 30)^2 - \dfrac{2\tan 30 \cos ec60}{1 + (\tan 30)^2} - (\cot 30)^2 = 0$

▶ Watch Video Solution

15. If $A = 60^0$ and $B = 30^0$, verify that

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

▶ Watch Video Solution

16. If $A = 60^0$ and $B = 30^0$, verify that

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

▶ Watch Video Solution

17. If $A = 60^0$ and $B = 30^0$, verify that

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

▶ Watch Video Solution

18. If $A = 60^0$ and $B = 30^0$, verify that

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

▶ Watch Video Solution

19. If $A = 60^0$ and $B = 30^0$, verify that

$$\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

▶ Watch Video Solution

20. If $A = 60^0$ and $B = 30^0$, verify that

$$\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

▶ Watch Video Solution

21. If $A = 60^0$ and $B = 30^0$, verify that

$$\sin(A + B)\sin(A - B) = (\sin A)^2 - (\sin B)^2$$

▶ Watch Video Solution