



MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

Elementary Trigonometry

Example

1. ABC is a right angle triangle where $\text{angle}C=90^\circ$. If $AB=30$ cm, $BC =18$ cm then find

(a) $\sin A$, (b) $\sec A$, (c) $\cos B$ (d) $\operatorname{cosec} B$, (e) $\cot B$,
(f) $\tan A$



[Watch Video Solution](#)

2. ABC is a right angle triangle right angled at C. If $\operatorname{cosec} A = \sqrt{5}$. Find the other trigonometrical ratios.



[Watch Video Solution](#)

3. A and P are two acute angles of two right angled triangles ABC and PQR. If $\sin A = \sin P$, prove that $\cot A = \cot P$



[Watch Video Solution](#)

4. A and P are two acute angles of two right angled triangles ABC and PQR. If $\sin A = \sin P$, prove that $A = P$



[Watch Video Solution](#)

5. If a line drawn parallel to one side of an acute angle triangle to intersect the other two sides at two distinct points ,then using trigonometric ratios prove that the other two sides are divided in the same ratio.



[Watch Video Solution](#)

6. If in two acute angled triangles corresponding angles are equal ,then using trigonometric ratios prove that the corresponding sides are in the same ratio.



Watch Video Solution

7. In $\triangle ABC$, right-angled at B , if $\tan A = 1/\sqrt{3}$,

find the value of

$$\sin A \cos C + \cos A \sin C$$



Watch Video Solution

8. In triangle ABC , right-angled at B , if $\tan A = 1/$

$\sqrt{3}$, find the value of ,

$$\cos A \cos C - \sin A \sin C$$



[Watch Video Solution](#)

9. If $(\tan A - \tan B) = x$ and $(\cot B - \cot A) = y$, then
 $\cot(A - B)$



[Watch Video Solution](#)

10. If $\tan A = \frac{5}{2}$ prove the following

$$3 \tan^2 A - 3 \sec^2 A + 4 = 1$$



[Watch Video Solution](#)

11. ABC is a right angle triangle right angled at C. If $AC = 3$ and $AB:BC = 13:5$, then find $\sin A$ and $\tan B$.



[Watch Video Solution](#)

12. ABC is a right angle triangle right angled at C. If $\sin A = \frac{3}{5}$ find $\tan B$.



[Watch Video Solution](#)

1. ABC is a right angled triangle where $\angle B = 90^\circ$. If $AB=15$ cm, $BC= 8$ cm then find $\sin C$.



[Watch Video Solution](#)

2. ABC is a right angled triangle where $\angle B = 90^\circ$. If $AB=15$ cm, $BC= 8$ cm then find $\tan C$.



[Watch Video Solution](#)

3. ABC is a right angled triangle where $\angle B = 90^\circ$. If $AB=15$ cm, $BC= 8$ cm then find sec C.



[Watch Video Solution](#)

4. ABC is a right angled triangle where $\angle B = 90^\circ$. If $AB=15$ cm, $BC= 8$ cm then find cos A.



[Watch Video Solution](#)

5. ABC is a right angled triangle where $\angle B = 90^\circ$. If $AB=15$ cm, $BC= 8$ cm then find cosec A.



[Watch Video Solution](#)

6. ABC is a right angled triangle where $\angle B = 90^\circ$. If $AB=15$ cm, $BC= 8$ cm then find cot A.



[Watch Video Solution](#)

7. ABC is right angled triangle right angled at C. if $\tan A = 5/12$, find the other trigonometric ratios.



[Watch Video Solution](#)

8. A and P are two acute angles of two right angled triangle ABC and PQR. If $\cos A = \cos P$ proved that $\tan A = \tan P$



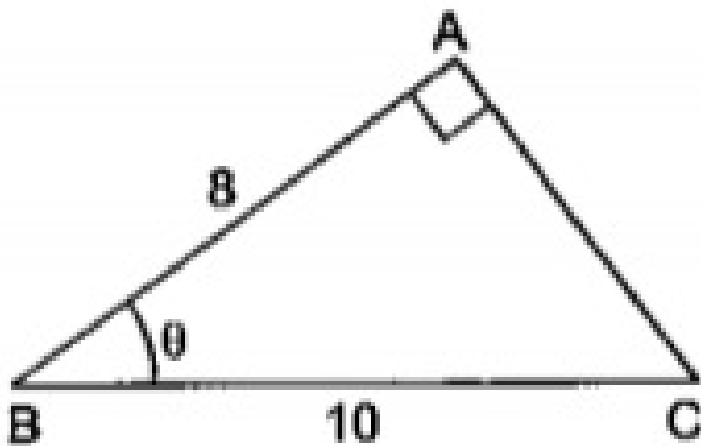
[Watch Video Solution](#)

9. A and P are two acute angles of two right angled triangle ABC and PQR. If $\cos A = \cos P$ proved that $A = P$.



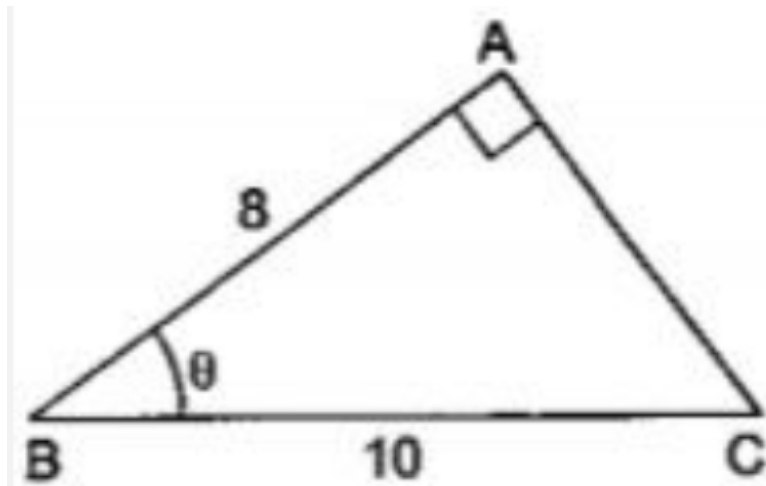
Watch Video Solution

10. Find $\sin \theta$.



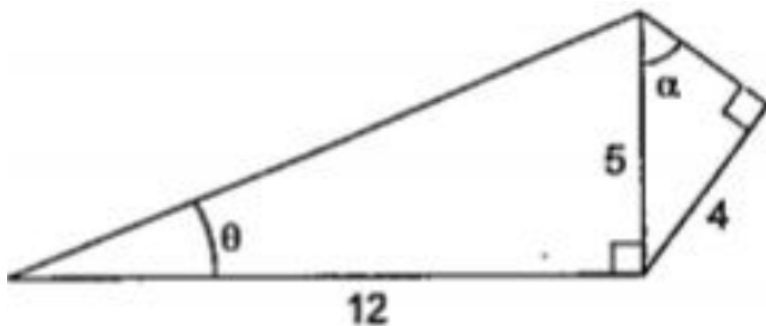
[Watch Video Solution](#)

11. Find $\tan \theta$.



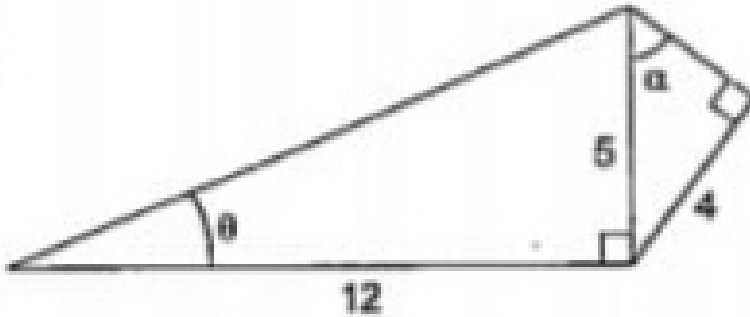
[Watch Video Solution](#)

12. Find $\sec \theta$.



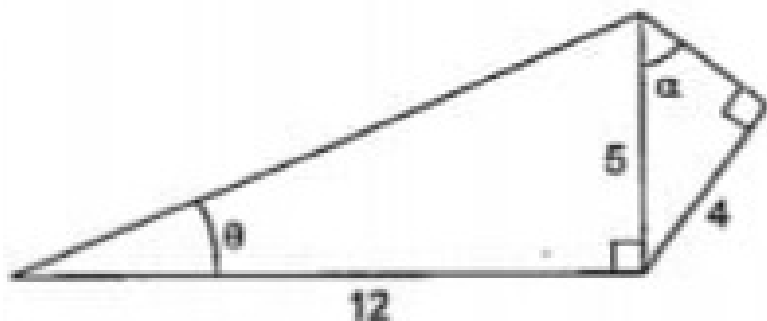
[Watch Video Solution](#)

13. Find $\cos^2 \theta - \sin^2 \theta$.



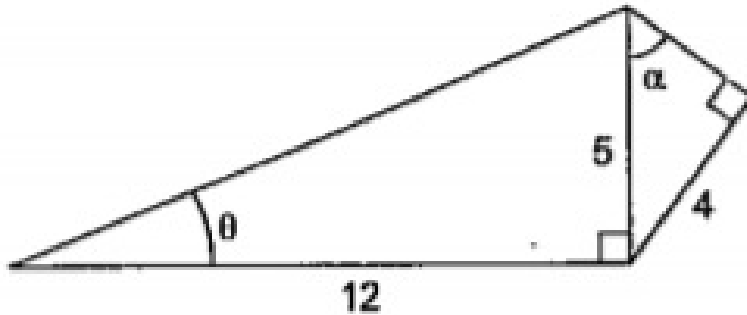
Watch Video Solution

14. Find $\cot \alpha$.



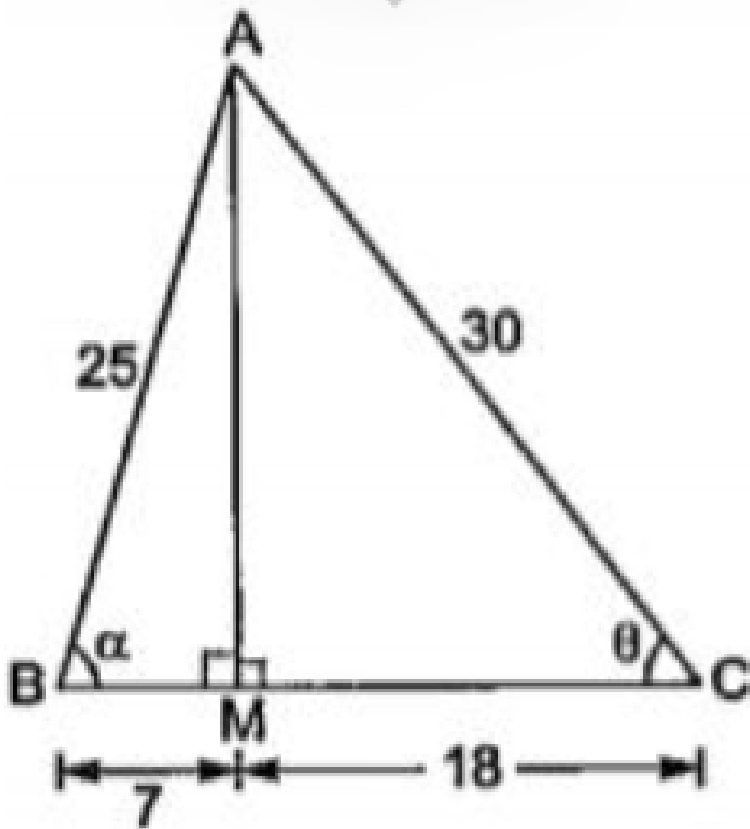
Watch Video Solution

15. Find $\cot^2 \alpha - \cos^2 \alpha$.



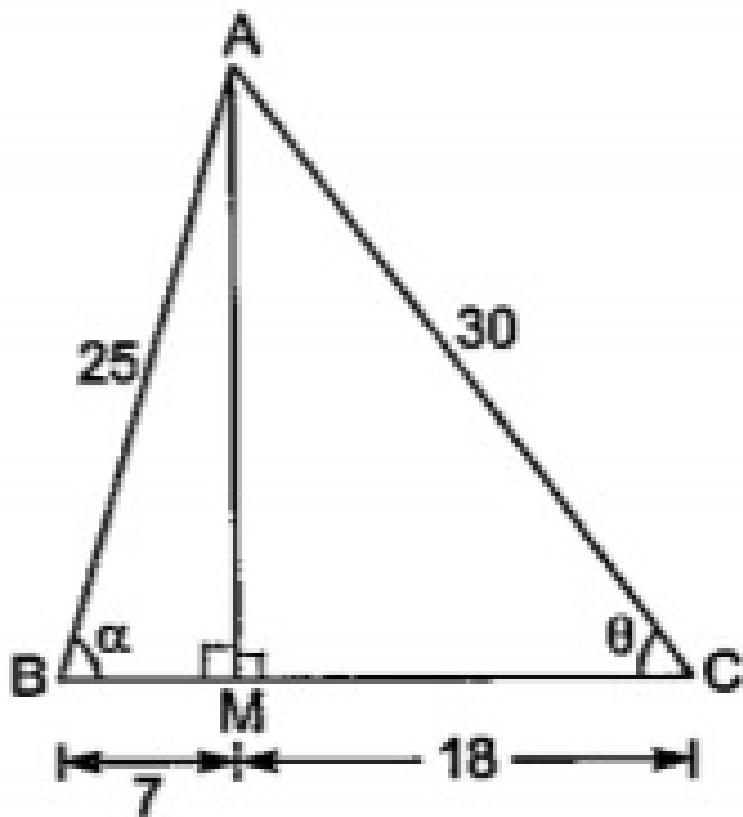
[Watch Video Solution](#)

16. Find $\sec^2 \theta - \frac{1}{\cot^2 \theta}$.



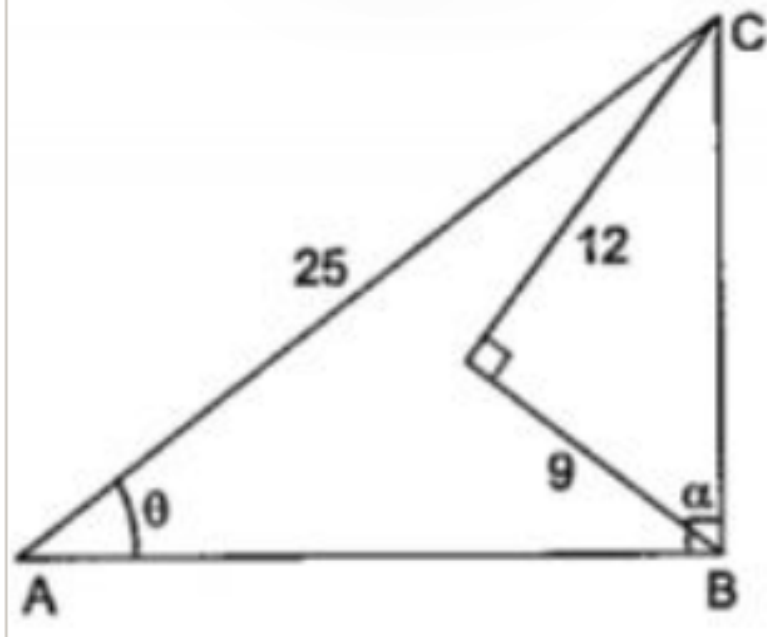
Watch Video Solution

17. Find $\cot^2 \theta - \cot^2 \alpha$.



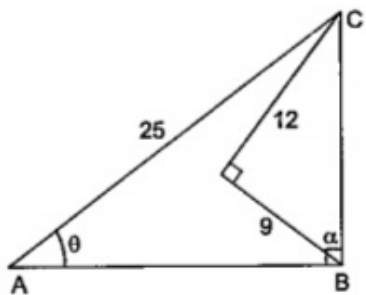
Watch Video Solution

18. Find $1(\tan^2 \theta) - \frac{1}{\sin^2 \theta}$.



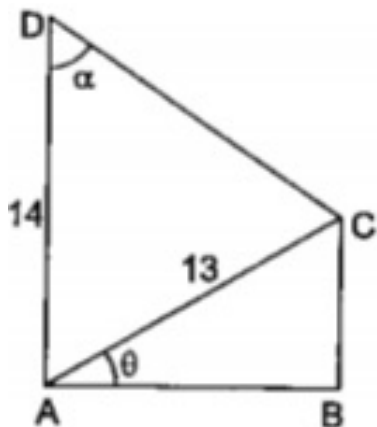
Watch Video Solution

19. Find $\cot^2 \theta - \sin^2 \alpha$.



Watch Video Solution

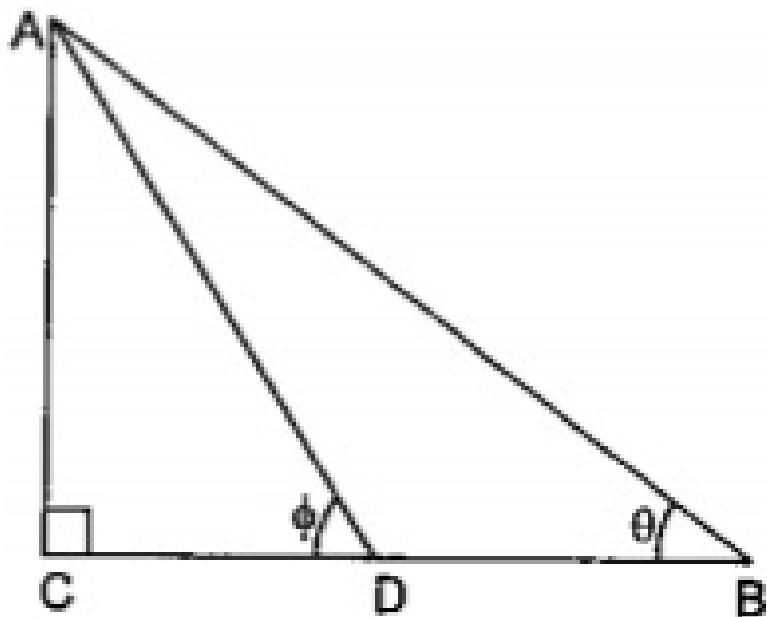
20. Find $\cot \alpha$.



Watch Video Solution

21. D is the mid point of BC show that

$$\frac{\tan \theta}{\tan \phi} = \frac{1}{2}$$



 [Watch Video Solution](#)

22. If $\sin \theta = \frac{5}{13}$, find the value of $(\cot \theta + \operatorname{cosec} \theta)$.

 [Watch Video Solution](#)

23. If $\cos \theta = \frac{4}{5}$, find the value of $(\sec \theta + \tan \theta)$.



[Watch Video Solution](#)

24. If $\tan \theta = \frac{3}{4}$, find the value of $\cos^2 \theta - \sin^2 \theta$.



[Watch Video Solution](#)

25. If $\sec \theta = 4$, find the value of

$$\frac{\cos \theta}{4 \cos^2 \theta + 3 \sin^2 \theta}.$$



[Watch Video Solution](#)

26. If $4 \tan \theta = 3$, find the value of

$$\frac{4 \sin \theta - 3 \cos \theta}{4 \sin \theta + 3 \cos \theta}.$$



[Watch Video Solution](#)

27. If $5 \cos \theta = 7 \sin \theta$, find the value of

$$\frac{\sin \theta + \cos \theta}{2 \sin \theta - 3 \cos \theta}.$$



Watch Video Solution

28. If $\tan \theta = \frac{a}{b}$ prove that $\frac{2 \sec \theta + 1}{\cos \theta + 2}$ is

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



Watch Video Solution

29. If $\tan \theta = \frac{p}{q}$, proved that $\frac{p \sin \theta - q \cos \theta}{p \sin \theta + q \cos \theta}$ is $\frac{p^2 - q^2}{p^2 + q^2}$.



[Watch Video Solution](#)

30. If $\tan \theta = \frac{3}{4}$, proved that $\sin^2 \theta + \cos^2 \theta$ is 1.



[Watch Video Solution](#)

31. If $\tan \theta = (\sqrt{2}) - 1$, prove that $\sin \theta \cos \theta = \frac{1}{2}$.



Watch Video Solution

32. In a right angled triangle ABC, right angled at B find $\cos A - \sin A$ if $BC = 80$ cm, $AC - AB = 2$ cm.



Watch Video Solution

33. In a right angled triangle ABC, right angled at B find $\cos A - \sin A$ if $BC = 20$ cm, $AC - AB = 10$ cm.



Watch Video Solution

34. In a right angled triangle ABC, right angled at B find $\cos A - \sin A$ if $BC = 9$ cm, $AC - AB = 1$ cm.



Watch Video Solution

35. In an isosceles triangle ABC if $AB = AC = 10$ cm and $BC = 12$ cm, find the values of $\tan \angle ACB$ and $\sec \angle ACB$.



Watch Video Solution

36. In an isosceles triangle ABC if $AB = AC = 15$ cm and $BC = 18$ cm, find the values of $\cos \angle ABC$ and $\sin \angle ABC$.



Watch Video Solution

37. In $\triangle ABC$ $\angle B = 90^\circ$ if $AB = 40$ cm and $AC + BC = 50$ cm, find $\sin A$.



Watch Video Solution

38. In $\triangle ABC$ $\angle B = 90^\circ$ if $AB = 40$ cm and $AC + BC = 50$ cm, find $\tan A$.



Watch Video Solution

39. In $\triangle ABC$ $\angle A = 90^\circ$ if $AB = 7$ cm and $BC - AC = 1$ cm, find $\cos C$.



[Watch Video Solution](#)

40. In $\triangle ABC$ $\angle A = 90^\circ$ if $AB = 7$ cm and $BC - AC = 1$ cm, find $\cot B$.



[Watch Video Solution](#)

41. The diagonals AC , BD of rhombus $ABCD$ meet at O . If $AC = 6$ cm and $BD = 8$ cm find $\sin \angle OCD$, $\cos \angle OCB$.



[Watch Video Solution](#)

42. E is the mid point of the side AB of the square ABCD, if $\angle AED = \theta$ then find the value of $\cos \theta$ and $\sin \theta$.



[Watch Video Solution](#)

43. AOB is diameter of a circle whose centre is O and C is any point on the circle. Join A and C, B and C and O and C. Show that $(\sin^2 \angle BCO + \sin^2 \angle ACO) = 1$.



[Watch Video Solution](#)

