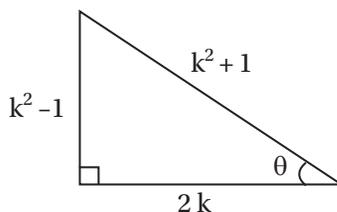


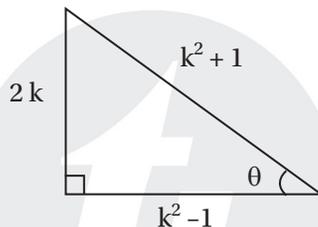


## Few Tricks and Tips for Class-X Board Examination (2026) Subject: MATHEMATICS Chapter Name :Trigonometry

1. If  $\sec \theta + \tan \theta = k$ , then to find  $\sec \theta - \tan \theta$  take reciprocal of  $k$  i.e.  $\sec \theta - \tan \theta = \frac{1}{k}$
2. If  $\sec \theta + \tan \theta = k$  ( $k > 1$ ), then to find all trigonometric ratios use this triangle method.



3. If  $\operatorname{cosec} \theta + \cot \theta = k$ , then  
$$\operatorname{cosec} \theta - \cot \theta = \frac{1}{k}$$
4. If  $\operatorname{cosec} \theta + \cot \theta = k$  ( $k > 1$ ), then to find all trigonometric ratios use this triangle method.



5. If  $\sec \theta - \tan \theta = k$  ( $k < 1$ ), then find  $\sec \theta + \tan \theta$  taking reciprocal of  $k$ . So,  
$$\sec \theta + \tan \theta = \frac{1}{k} = x \text{ (say).}$$
now, to find all trigonometric ratios proceed as earlier.
6. If  $\operatorname{cosec} \theta - \cot \theta = k$  ( $k < 1$ ), then find  $\operatorname{cosec} \theta + \cot \theta$  taking reciprocal of  $k$ .  
So, 
$$\operatorname{cosec} \theta + \cot \theta = \frac{1}{k} = x \text{ (say).}$$
Now, to find all trigonometric ratios proceed as earlier.
7. From the given trigonometric ratio value to find the angle use standard angle value. For it learn standard angle value chart.
8. If  $\cos$  related expression given, then to get  $\sin$  related expression try to use the identity  $\sin^2 \theta + \cos^2 \theta = 1$  i.e.  
$$1 - \cos^2 \theta = \sin^2 \theta.$$
9. If  $\sin \theta + \cos \theta$  or  $\sin \theta - \cos \theta$  value given, then squaring both sides try to find the value of  $\sin \theta \cos \theta$ . It can help to solve the sum.
10. When  $\tan \theta + \cot \theta$  expression given, then break  $\tan \theta$  and  $\cot \theta$  in terms of  $\sin \theta$  and  $\cos \theta$  using  $\tan \theta = \frac{\sin \theta}{\cos \theta}$  and  $\cot \theta = \frac{\cos \theta}{\sin \theta}$ . It can help to solve the sum.
11. To prove 
$$\frac{\cos A - \sin A + 1}{\cos A + \sin A - 1} = \operatorname{cosec} A + \cot A,$$
 in L.H.S. part divide each term of Numerator and denominator by

$\sin A$ , then the expression will be in terms of  $\operatorname{cosec} A$  and  $\cot A$ . Then replace 1 of numerator only by  $\operatorname{cosec}^2 A - \cot^2 A$  and simplify applying factorisation concept.

**12.** To prove  $\frac{\sin A - \cos A + 1}{\sin A + \cos A - 1} = \sec A + \tan A$ , in L.H.S. part divide each term of Numerator and denominator by  $\cos A$ , then the expression will be in terms of  $\sec A$  and  $\tan A$ . Then replace 1 of numerator only by  $\sec^2 A - \tan^2 A$  and simplify applying factorisation concept.

**13.** If trigonometric ratios consist two unknown angles, then to find the unknown angles, form two equations with the help of standard angle values and solve.

**14.** If the angle of elevation is formed at  $x$  unit above the ground, then in right angled triangle the length of perpendicular will be  $x$  unit less than the actual height of the object.

To find the angle of elevation use

(i)  $\tan \theta = \frac{P}{B}$  if  $P$  and  $B$  both known

(ii)  $\sin \theta = \frac{P}{H}$  if  $P$  and  $H$  both known

(iii)  $\cos \theta = \frac{B}{H}$  if  $B$  and  $H$  both known

To find the base use

(i)  $\tan \theta = \frac{P}{B}$  when  $\theta$  and  $P$  both are known

(ii)  $\cos \theta = \frac{B}{H}$  when  $\theta$  and  $H$  both are known

To find the perpendicular use

(i)  $\tan \theta = \frac{P}{B}$  when  $\theta$  and  $B$  both are known

(ii)  $\sin \theta = \frac{P}{H}$  when  $\theta$  and  $H$  both are known

When angles of elevation at two different points on the ground for the given same height are known, then distance between two points will be

(i) difference of two bases when points are on the same side of the height.

(ii) sum of two bases when points are on the opposite side of the height.

