

Tips and Tricks

1. Combine Terms into a Single Fraction

When there are 2 terms on one side and 1 term on the other side, combine the side with 2 terms into 1 fraction after making their denominators the same.

Example Q3) Prove the identity $1 - \frac{\sin^2 x}{1 + \cos x} = \cos x$

Notice that LHS has 2 terms: 1 and $\frac{\sin^2 x}{1 + \cos x}$

Notice that RHS has 1 term: $\cos x$

Approach: Start by combining the 2 terms on the LHS.

$$LHS = 1 - \frac{\sin^2 x}{1 + \cos x}$$

$$= \frac{1 + \cos x}{1 + \cos x} - \frac{\sin^2 x}{1 + \cos x}$$

$$= \frac{1 + \cos x - \sin^2 x}{1 + \cos x} \quad (\text{combine 2 terms into 1 fraction})$$

=...

(Scroll to bottom for full solution)

2. Practice! Practice! Practice!

Proving trigonometric function becomes a piece of cake after you have conquered a massive number questions and expose yourself to all the different varieties of questions. There are no hard and fast rule to handling JEE-level trigonometry proving questions since every question is like a puzzle. But once you have solved a puzzle before, it becomes easier to solve the same puzzle again.

3. Make nice cheat sheets for quick revisions.