There are a variety of strategies that can be used to simply trigonometric identities.

1. Substitute Basic Identities	2. Look for Pythagorean Substitutions and Variations
3. Look for algebraic manipulation (i.e. factoring, distributing, FOIL, etc.)	4. When you multiply by reciprocal function it will always get you one
5.Splitting fractions will help (sometimes). Note: Whole Denominator Goes to Both	6. Multiply by "one" to create a common denominator.
7. Change everything to sin and cos equivalents.	8. If all else fails, work on both sides.

Trigonometric Identities Practice

Verify the following trigonometric identities on a separate sheet of paper.

1. $\cos^3\theta + \sin^2\theta\cos\theta = \cos\theta$
2. $\csc^2\theta - \cos^2\theta\csc^2\theta = 1$
3. $\sec\theta\sin\theta = \tan\theta$
4. $\dfrac{\csc\theta}{\sec\theta} = \cot\theta$
5. $\dfrac{\sec^2\theta-1}{\tan\theta} = \tan\theta$
6. $\dfrac{\cot\theta}{\csc^2\theta-1} = \tan\theta$
7. $\sec\theta\sin\theta\cot\theta = 1$
8. $\cot\theta\csc\theta\tan^2\theta = \sec\theta$
9. $\cos^2\theta - \sin^2\theta = 2\cos^2\theta - 1$
10. $\cos^2\vartheta - \sin^2\theta = 1 - 2\sin^2\theta$
11. $\cot\theta\sin\theta = \cos\theta$
12. $\dfrac{\tan\theta}{\sec\theta} = \sin\theta$
13. $\sin\theta\,(1 + \csc\theta) = \sin\theta + 1$
14. $(1 + \tan\theta)^2 = \sec^2\theta + 2\tan\theta$
15. $(1 + \tan^2\theta)\cos^2\theta = 1$
16. $\cos\theta = \sec\theta - \sin\theta\tan\theta$
17. $(\sec\theta + \tan\theta)(\sec\theta - \tan\theta) = 1$
18. $\dfrac{\sec\theta}{\csc^2\theta} = \sec\theta - \cos\theta$
19. $\dfrac{1-2\csc\theta}{\cot\theta} = \tan\theta - 2\sec\theta$
20. $\dfrac{\sec^2\theta-1}{\tan\theta} = \tan\theta$
21. $\sin\theta + \cos\theta\cot\theta = \csc\theta$
22. $\cos\theta(\csc\theta - \sec\theta) = \cot\theta - 1$
23. $\dfrac{\cos\theta}{1-\sin^2\theta} = \sec\theta$
24. $\tan^2\theta - \tan^2\theta\sin^2\theta = \sin^2\theta$
25. $\dfrac{\cot\theta}{1+\cot^2\theta} = \sin\theta\cos\theta$
26. $\dfrac{1+\tan^2\theta}{\cos^2\theta} = \sec^4\theta$
27. $\dfrac{\sin\theta+\cos\theta}{\sin\theta\cos\theta} = \sec\theta + \csc\theta$
28. $\dfrac{\sec\theta+\tan\theta}{\cos\theta+\cot\theta} = \sin\theta\sec^2\theta$
29. $\left(\dfrac{1+\sin\vartheta}{\cos\vartheta}\right)^2 = \dfrac{1+\sin\vartheta}{1-\sin\vartheta}$

30. $\dfrac{1+\sec\theta}{\tan\theta+\sin\theta} = \csc\theta$
31. $\csc\theta\cos^2\theta + \sin\theta = \csc\theta$
32. $\dfrac{\csc^2\theta}{\csc^2\theta-1} = \sec^2\theta$
33. $\sin\vartheta\cdot\left(\dfrac{\cot\vartheta}{\sec\vartheta}+\csc\vartheta\right) = \cos^2\vartheta+1$
34. $\dfrac{2\cos^2\theta-\sin^2\theta+1}{\cos\theta} = 3\cos\theta$
35. $\csc\theta - \sin\theta = \cot\theta\cos\theta$
36. $\dfrac{1}{1-\cos\theta}+\dfrac{1}{1+\cos\theta} = 2\csc^2\theta$
37. $\dfrac{1+\tan\theta}{\tan\theta} = 1+\cot\theta$
38. $\dfrac{\cos\theta+\tan\theta}{\sin\theta} = \sec\theta+\cot\theta$
39. $\csc^4\theta - \cot^4\theta = 2\csc^2\theta - 1$
40. $\dfrac{\cos\theta+\cot\theta}{\csc\theta+1} = \cos\theta$
41. $\dfrac{1+\sec\theta}{\tan\theta+\sin\theta} = \csc\theta$
42. $\dfrac{2-\sec^2\theta}{\sec\theta} = \dfrac{1-2\sin^2\theta}{\cos\theta}$
43. $\dfrac{1}{\sec\theta-\tan\theta} = \sec\theta+\tan\theta$
44. $1 + \cos\theta = \cot\theta(\sin\theta + \tan\theta)$
45. $1 - \sin\theta = \tan\theta(\cot\theta - \cos\theta)$
46. $\dfrac{\tan\theta}{1+\tan^2\theta} = \sin\theta\cos\theta$
47. $(\sec\theta - \tan\theta)^2 = \dfrac{1-\sin\theta}{1+\sin\theta}$
48. $\sqrt{\dfrac{1-\cos\theta}{1+\cos\theta}} = \dfrac{1-\cos\theta}{\sin\theta}$
49. $\sqrt{\dfrac{\sec\theta+\tan\theta}{\sec\theta-\tan\theta}} = \dfrac{1+\sin\theta}{\cos\theta}$
50. $\sin^4\theta - \cos^4\theta = 1 - 2\cos^2\theta$
51. ~~$\sin^2\theta\cdot\dfrac{\csc^2\theta}{\cos^2\theta} = \cot^2\vartheta = \sin^2\theta$~~
52. $\dfrac{\sin^2\theta}{1+\sin^2\theta-\cos\theta} = \dfrac{\cos\theta+1}{\cos\theta+2}$
53. $\dfrac{\sin A\cos B+\cos A\sin B}{\cos A\cos B-\sin A\sin B} = \dfrac{\tan A+\tan B}{1-\tan A\tan B}$