

VD topic 3 part 2

Verify the following Identifies

1. $\tan x \sin x + \cos x = \sec x$	9. $\tan^2 x = \csc^2 x \tan^2 x - 1$
2. $\frac{1}{\tan x} + \tan x = \frac{1}{\sin x \cos x}$	10. $\sec x + \tan x = \frac{\cos x}{1 - \sin x}$
3. $1 - 2\cos^2 x = \frac{\tan^2 x - 1}{\tan^2 x + 1}$	11. $\tan^2 x + 1 + \tan x \sec x = \frac{1 + \sin x}{\cos^2 x}$
4. $(\sin x - \cos x)^2 + (\sin x + \cos x)^2 = 2$	12. $\frac{\sin^4 x - \cos^4 x}{\sin^2 x - \cos^2 x} = 1$
5. $\frac{1 + \tan x}{1 - \tan x} = \frac{\cos x + \sin x}{\cos x - \sin x}$	13. $\sin x - \sin x \cos^2 x = \sin^3 x$
6. $\csc^4 x - \cot^4 x = \csc^2 x + \cot^2 x$	14. $\frac{\cos x}{1 + \sin x} + \frac{1 + \sin x}{\cos x} = 2 \sec x$
7. $\frac{\sin^3 x + \cos^3 x}{\sin x + \cos x} = 1 - \sin x \cos x$	15. $\frac{\tan x - \sin x \cos x}{\tan x} = \sin^2 x$
8. $\frac{\cot x - 1}{\cot x + 1} = \frac{1 - \tan x}{1 + \tan x}$	16. $\frac{\sin^2 x + 4 \sin x + 3}{\cos^2 x} = \frac{3 + \sin x}{1 - \sin x}$