(

$\_ \pm \_$

5.2 Another Trick

When you have a Binomial in the denominator, try multiplying by the Conjugate $\Rightarrow$ Pythagorean Identity!

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

$\dfrac{\cos^2 x}{(1+\sin x)(1-\sin x)}$

$\dfrac{\cos^2 x(1+\sin x)}{(1-\sin^2 x)}$

$\dfrac{\cos^2 x(1+\sin x)}{\cos^2 x}$

$1+\sin x$ ✓

② $\csc x + \cot x = \dfrac{1}{\csc x - \cot x}$ ✓

$\dfrac{1}{\csc x - \cot x}\cdot\dfrac{(\csc x + \cot x)}{(\csc x + \cot x)}$

$\dfrac{\csc x + \cot x}{\csc^2 x - \cot^2 x}$ ✓

$\dfrac{\csc x + \cot x}{1}$

(3) $\dfrac{\sec x + 1}{\tan x} = \dfrac{\sin x}{1 - \cos x} \cdot \dfrac{(1 + \cos x)}{(1 + \cos x)}$

$\tan x = \dfrac{\sin}{\cos}$

$\dfrac{\cos}{\sin}\left(\dfrac{1}{\cos} + 1\right)$

$\csc x + \cot x$

$\dfrac{\sin x (1 + \cos x)}{1 - \cos^2 x}$

$\sin^2 x$

$\dfrac{1 + \cos x}{\sin x} = \csc x + \cot x$ ✓