

Stewart Precalc 7.1.58

$$(1 - \cos^2 x)(1 + \cot^2 x) = 1$$

$$= \sin^2 x (1 + \cot^2 x)$$

$$= \sin^2 x \cdot \csc^2 x = \sin^2 x \cdot \frac{1}{\sin^2 x}$$

$$| \sin^2 x + \cos^2 x = 1$$

$$| \sin^2 x = 1 - \cos^2 x$$

$$| 1 + \cot^2 x = \csc^2 x$$

$$| \csc x = \frac{1}{\sin x}$$