

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

$$= \cos^2 x \left(1 - \frac{\sin^2 x}{\cos^2 x} \right)$$

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

$$= \frac{1}{\frac{\sin^2 x + \cos^2 x}{\cos^2 x}} \times (1 - \tan^2(x)) = \frac{1}{1 + \tan^2(x)} + (1 - \tan^2(x))$$

$$\text{Rec } \cos 2x = \frac{1 - \tan^2(x)}{1 + \tan^2(x)}$$