

Homework 6 - Trigonometry

$$1) \frac{\sin a}{1 + \cos a} = \frac{1 - \cos a}{\sin a}$$

$$2) \cos^4 a - \sin^4 a = 2 \cos^2 a - 1$$

$$3) \frac{\tan a + \cot b}{\tan b + \cot a} = \frac{\tan a}{\tan b}$$

$$4) \tan^2 a - \sin^2 a = \tan^2 a \cdot \sin^2 a$$

$$5) \sin^4 a + \cos^4 a = 1 - 2 \cos^2 a \cdot \sin^2 a$$

$$6) \frac{\cos x}{1 - \tan x} + \frac{\sin x}{1 - \cot x} = \sin x + \cos x$$

$$7) \sec x \cdot \csc x = \tan x + \cot x$$

$$8) \frac{\cos x}{1 - \sin x} + \frac{\cos x}{1 + \sin x} = \frac{2}{\cos x}$$

$$9) 2(\sin^6 a + \cos^6 a) - 3(\sin^4 a + \cos^4 a) = -1$$

$$10) \sin(4a) = 4 \sin a \cos^3 a - 4 \sin^3 a \cdot \cos a$$