TRIGONOMETRIC IDENTITIES

$$\cot x - \tan x = 2 \cot 2x$$

$$tan (A+B) = tanA + tanB + tanA \cdot tanB \cdot tan(A+B)$$

If A+B =
$$\frac{\pi}{4}$$
 \Rightarrow tanA + tanB+ tanA · tanB = 1

$$\cos \alpha + \cos \beta + \cos (\alpha + \beta + y) = 4 \cos \left(\frac{\alpha + \beta}{2}\right) \cos \left(\frac{\beta + Y}{2}\right) \cos \left(\frac{Y + \alpha}{2}\right)$$

$$\sin \alpha + \sin \beta + \sin (\alpha + \beta + \gamma) = 4 \sin \left(\frac{\alpha + \beta}{2}\right) \sin \left(\frac{\beta + \gamma}{2}\right) \sin \left(\frac{\gamma + \alpha}{2}\right)$$

$$4 \sin x \sin(60-x) \sin(60+x) = \sin 3x$$

$$4\cos x \cos(60-x)\cos(60+x) = \cos 3x$$

$$tanx tan(60-x)tan(60+x) = tan 3x$$