Equation Trigo

We have equation with trigo

Example :

Sinx = 1 * Sinx = sinα

$Sin^2x = \frac{1}{4}$ * x = α + 360k (180-α)+360k

Sinx = cosx *

Sin2x = cos2x * cos = cosα

x = ±α + 360k

$\cos^4\frac{x}{2} - sin^4\frac{x}{2} = 1$

$a^2 - b^2 = (a - b)(a + b)$

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

Cosx = 1

Cosx = cos0

x = 0+360k

prove sinx < $\frac{1}{2}$ $\cos^2x - 4\sin x + \frac{5}{4} > 0$

$(1 - \sin^2x) - 4\sin x + \frac{5}{4} > 0$

Sinx = a

$1 - a^2 - 4a + \frac{5}{4} > 0$

$a^2 + 4a - 2^1/_4 < 0$

$a = \frac{-4\pm\sqrt{16+9}}{2}$ $\frac{1}{2}$

$-\frac{9}{2} = -4\frac{1}{2}$

$-4\frac{1}{2} < a < \frac{1}{2}$

$-1 \leq \sin x < \frac{1}{2}$