$\cos(3x-30^\circ) = -\frac{\sqrt{3}}{2}$ $\quad \cos 30^\circ = \sqrt{3}/2$ (4)

El Cos es negativo en el 2° y 3er cuadrante: 150° y 210°

$3x - 30^\circ = 150^\circ$

$x = 60^\circ$

$\boxed{x = 60^\circ + 360k}$

$3x - 30^\circ = 210^\circ$

$x = 80$

$\boxed{x = 80^\circ + 360k}$

$\tan^2 x + 3 = 4\tan x$

$\tan^2 x - 4\tan x + 3 = 0$

$\tan x = \frac{4 \pm \sqrt{16-12}}{2} = \frac{4 \pm 2}{2} = \begin{cases} 3 \\ 1 \end{cases}$

$\tan x = 3 \quad x = \arctan 3 \quad x = 71^\circ 33' + 360k \quad x = 251^\circ 33' + 360k$

$\tan x = 1 \quad x = \arctan 1 \quad x = 45^\circ + 360k \quad x = 225 + 360k$

(9) $\operatorname{sen}^2 \alpha = \frac{1}{1+\tan^2 \alpha}$ Falso

$\frac{1}{1+\tan^2 \alpha} = \frac{1}{1+\frac{\operatorname{sen}^2 \alpha}{\cos^2 \alpha}} = \frac{1}{\frac{\cos^2 \alpha + \operatorname{sen}^2 \alpha}{\cos^2 \alpha}} = \frac{\cos^2 \alpha}{\cos^2 \alpha + \operatorname{sen}^2 \alpha} = \cos^2 \alpha$

$\frac{\cos \alpha + \tan \alpha}{\cos \alpha \cdot \tan \alpha} = \cot\tan \alpha + \sec \alpha$ ✓

↳ $\frac{\cos \alpha + \frac{\operatorname{sen} \alpha}{\cos \alpha}}{\cos \alpha \cdot \frac{\operatorname{sen} \alpha}{\cos \alpha}} = \frac{\frac{\cos^2 \alpha + \operatorname{sen} \alpha}{\cos \alpha}}{\operatorname{sen} \alpha} = \frac{\cos^2 \alpha + \operatorname{sen} \alpha}{\operatorname{sen} \alpha \cos \alpha} =$

$\frac{\cos^2 \alpha}{\operatorname{sen} \alpha \cos \alpha} + \frac{\operatorname{sen} \alpha}{\operatorname{sen} \alpha \cos \alpha} = \cot\tan \alpha + \sec \alpha$