$2\cos 2x + \sin 2x \geq \operatorname{tg} x$

$\sin^2 x = \sin^2 x / 1 = \sin^2 x / (\sin^2 x + \cos^2 x) = \operatorname{tg}^2 x / (1+\operatorname{tg}^2 x)$

$\cos^2 x = \cos^2 x / (\cos^2 x + \sin^2 x) = 1/(1+\operatorname{tg}^2 x)$

$\sin 2x = \sin 2x/1 = \sin 2x/(\cos^2 x + \sin^2 x) = 2\sin x \cdot \cos x/(\cos^2 x + \sin^2 x) = 2\operatorname{tg} x/(1+\operatorname{tg}^2 x)$

$\cos 2x = \cos 2x/1 = (\cos^2 x - \sin^2 x)/(\sin^2 x + \cos^2 x) = (1-\operatorname{tg}^2 x)/(1+\operatorname{tg}^2 x)$

$2(1-\operatorname{tg}^2 x)/(1+\operatorname{tg}^2 x) + 2\operatorname{tg} x/(1+\operatorname{tg}^2 x) \geq \operatorname{tg} x$

$\operatorname{tg} x = t$

$2(1-t^2)/(1+t^2) + 2t/(1+t^2) \geq t$

$2-2t^2+2t \geq t+t^3$

$t^3+2t^2-t-2 \leq 0$

$t^2(t+2)-(t+2) \leq 0$

$(t^2-1)(t+2) \leq 0$

$t=\pm 1$

$t=-2$

$t \in (-\infty;-2] \cup [-1;1]$

$\operatorname{tg} x \leq -2$

$-p/2+pk < x \leq \operatorname{arctg}(-2)+pk$

$-1 \leq \operatorname{tg} x \leq 1$

$-P/4+pk \leq x \leq p/4+pk$