4sinx + 2cosx = 2+ 3tgx

cosx != 0
4sinxcosx + **2cos^2 x** - 2cosx - 3sinx = 0
4sinxcosx + **2 - 2sin^2 x** - 2cosx - 3sinx = 0
2sinx**(2cosx - sin x)**+2 - 2cosx - 3sinx = 0
2sinx**(2cosx - sin x)**+2 - 2cosx +sinx - 4sinx = 0
2sinx**(2cosx - sin x)** - **(2cosx -sinx)** +2 - 4sinx = 0
(2cosx - sin x) (2sinx- 1) +2 - 4sinx = 0
(2cosx - sin x) (2sinx- 1) -2(2sinx-1) = 0
(2sinx - 1)(2cosx - sinx - 2) = 0
2sinx = 1
sinx = ½
x = 5P/6 + 2Pk
x = P/6 + 2Pk

2cosx - sinx - 2=0
V5(2/V5cosx - 1/V5sinx) = 2
cost=-1/V5 t=arccos(-V5/5)
sint=2/V5
V5(sint*cosx -cost*sinx) = 2
-V5(cost*sinx-sint*cosx) = 2
-V5sin(x-t) = 2
-V5sin(x-arccos(-V5/5)) = 2\
sin(x-arccos(-V5/5)) = -2/V5
x-arccos(-V5/5)=arcsin(-2/V5)+2Pk
x-arccos(-V5/5)=arcsin(-2/V5)+2Pk
x=arccos(-V5/5)+arcsin(-2/V5)+2Pk
x=arccos(-V5/5)+P-arcsin(-2/V5)+2Pk

2cosx - sinx - 2=0

2 - 4sin^2(x/2) - 2sin(x/2)cos(x/2) - 2 = 0
-2sin(x/2)(2sin(x/2) + cos(x/2)) = 0

sin(x/2) = 0
x/2 = Pk
x = 2Pk

2sin(x/2) + cos(x/2)=0
V5(2/V5sin(x/2) + 1/V5cos(x/2)) = 0
cost *sin(x/2) + sint*cos(x/2) = 0
sin(x/2 + arccos(2/V5)) = 0
x/2 + arccos(2/V5) = Pk
x = 2Pk - 2arccos(2/V5)

2sin(x/2) + cos(x/2)=0
пусть cos(x/2)=0, тогда по ур-и. sin(x/2)=0 => cos(x/2)!=0
2tg(x/2)+1=0
tg(x/2)=-½
x/2=arctg(-½) + Pk
x=2arctg(-½) + 2Pk