cos((P/2)*tgx) = sin((P/2)*ctgx)
sin((P/2)*ctgx)=sin(P/2 - (P/2)*tgx)
sin((P/2)*ctgx)-sin(P/2 - (P/2)*tgx) =0
2cos[((P/2)*ctgx + P/2 - (P/2)*tgx) / 2]*
sin[((P/2)*ctgx - P/2 + (P/2)*tgx) / 2]=0

1)cos[((P/2)*ctgx + P/2 - (P/2)*tgx) / 2]=0
((P/2)*ctgx + P/2 - (P/2)*tgx) / 2 = P/2 + Pk
((P)*ctgx + P- (P)*tgx) = 2P + 4Pk
P(ctgx-tgx) = P + 4Pk
ctgx-tgx = 1 + 4k
cosx/sinx-sinx/cosx = 1 + 4k
(cos^2 x - sin^2 x) / sinxcosx = 1+4k
cos2x / (sin2x/2) = 1+4k
cos2x / sin2x = (1+4k) / 2
ctg 2x = (1+4k) / 2
2x = arcctg (1+4k) / 2 + Pm
x=½* arcctg (1+4k) / 2 + Pm/2

По ОДЗ корни отсеивать не надо
k=0 P/8 + Pm/2

sin[((P/2)*ctgx - P/2 + (P/2)*tgx) / 2]=0
((P/2)*ctgx - P/2 + (P/2)*tgx) / 2 = Pk
(P/2)*ctgx - P/2 + (P/2)*tgx = 2Pk
ctgx - 1 + tgx = 4k
ctgx + tgx = 4k + 1
(sin^2 x + cos^ 2 x) / sinxcosx = 4k+1
2/sin2x = 4k+1
sin2x=2/(4k+1) |2/(4k+1)|<=1
2x=arcsin[2/(4k+1)] + 2Pm
x=½ * arcsin[2/(4k+1)] + Pm
2x=P - arcsin[2/(4k+1)] + 2Pm
x=P/2 - ½ arcsin[2/(4k+1)] + Pm

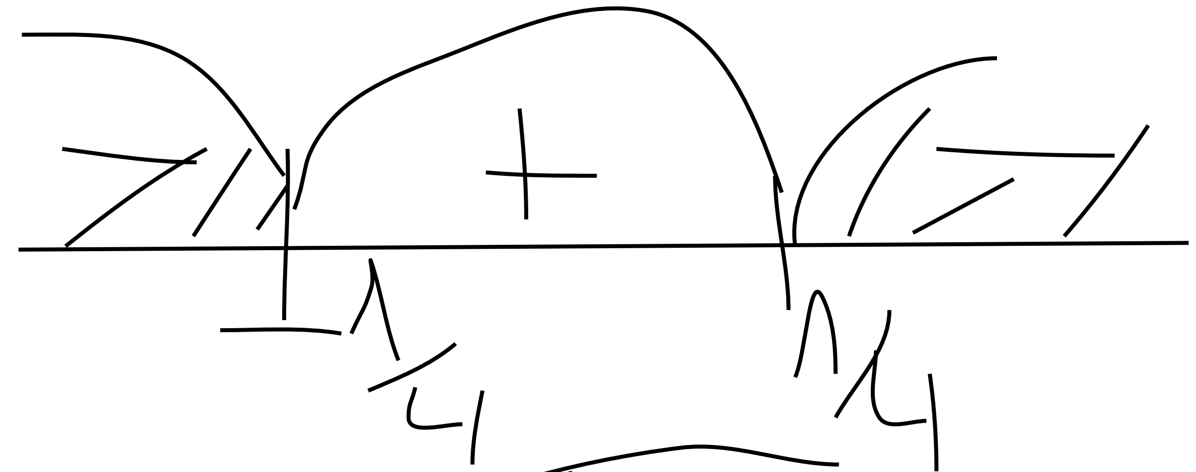
|2/(4k+1)|<=1

2/(4k+1)<=1
2/(4k+1)>=-1

(2 - 4k - 1)/(4k+1)<=0
(1 - 4k)/(4k+1)<=0

(-беск; -¼) U [¼;+беск)

(2+4k+1)/(4k+1)>=0



ОТВЕТ:
 x=½* arcctg (1+4k) / 2 + Pm/2, k любое
x=½ * arcsin[2/(4k+1)] + Pm, x=P/2 - ½ arcsin[2/(4k+1)] + Pm k!=0, k - целое
m любое