

$$\begin{aligned} \cos((P/2)*\text{tg}x) &= \sin((P/2)*\text{ctg}x) \\ ((P/2)*\text{tg}x) &= t \\ ((P/2)*\text{ctg}x) &= k \\ \text{cost} &= \text{sink} \\ \text{cost} - \text{sink} &= 0 \\ \text{sink} &= \cos(P/2 - k) \\ \text{cost} - \cos(P/2 - k) &= 0 \\ \cos q - \cos h &= -2 * \sin((q+h)/2) * \sin((q-h)/2) \\ \sin((t+P/2-k)/2) * \sin((t-P/2+k)/2) &= 0 \\ \sin((t+P/2-k)/2) &= 0 \\ (t+P/2-k)/2 &= Pn \\ t+P/2-k &= 2Pn \\ t-k &= 2Pn - P/2 \\ (P/2)*\text{tg}x - (P/2)*\text{ctg}x &= 2Pn - P/2 \\ \text{tg}x - \text{ctg}x &= 4n - 1 \\ \sin x / \cos x - \cos x / \sin x &= 4n - 1 \\ (\sin^2 x - \cos^2 x) / \sin x * \cos x &= 4n - 1 \\ \sin x \neq 0 \ \&\& \ \cos x \neq 0 \\ -\cos 2x / \sin(2x) / 2 &= 4n - 1 \\ \cos 2x / \sin 2x &= \frac{1}{2} - 2n \\ \text{ctg} 2x &= \frac{1}{2} - 2n \\ 2x &= \text{arcctg}(\frac{1}{2} - 2n) + Pn \\ x &= (\text{arcctg}(\frac{1}{2} - 2n) + Pn) / 2 \end{aligned}$$

$$\begin{aligned} \sin((t-P/2+k)/2) &= 0 \\ (t-P/2+k)/2 &= Pn \\ t-P/2+k &= 2Pn \\ t+k &= 2Pn + P/2 \\ (P/2)*\text{tg}x + (P/2)*\text{ctg}x &= 2Pn + P/2 \\ \text{tg}x + \text{ctg}x &= 4n + 1 \\ \sin x / \cos x + \cos x / \sin x &= 4n + 1 \\ (\sin^2 x + \cos^2 x) / \sin x * \cos x &= 4n + 1 \\ (\sin^2 x + \cos^2 x) / \sin x * \cos x &= 1 \\ 2 / \sin 2x &= 4n + 1 \\ 2 / (4n + 1) &= \sin 2x \\ 2x &= \arcsin(2 / (4n + 1)) + 2Pn \\ x &= \arcsin(2 / (4n + 1)) / 2 + Pn \\ 2x &= P - \arcsin(2 / (4n + 1)) + 2Pn \\ x &= P/2 - \arcsin(2 / (4n + 1)) / 2 + Pn \\ -1 &\leq 2 / (4n + 1) \leq 1 \end{aligned}$$

Ответ:  $(\text{arcctg}(\frac{1}{2} - 2n) + Pk) / 2$ ;  $\arcsin(2 / (4n + 1)) / 2 + Pn$ ;  $P/2 - \arcsin(2 / (4n + 1)) / 2 + Pn$ ,  $n! = 0$