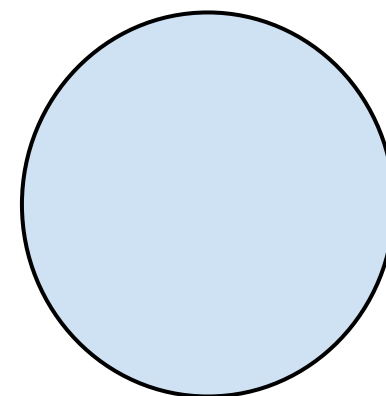


$$\begin{aligned} \sin 4x &= (1+\sqrt{2})(\sin 2x + \cos 2x - 1) \\ 2\sin 2x \cos 2x &= (1+\sqrt{2})(\sin 2x + \cos 2x - 1) \\ 2\sin 2x \cos 2x + 1 &= (1+\sqrt{2})(\sin 2x + \cos 2x - 1) + 1 \\ \sin^2 2x + \cos^2 2x + 2\sin 2x \cos 2x &= (1+\sqrt{2})(\sin 2x + \cos 2x - 1) + 1 \\ (\sin 2x + \cos 2x)^2 &= (1+\sqrt{2})(\sin 2x + \cos 2x - 1) + 1 \\ \sin 2x + \cos 2x &= t \\ t^2 &= (1+\sqrt{2})(t-1) + 1 \\ t^2 &= t - 1 + \sqrt{2}t - \sqrt{2} + 1 \\ t^2 - t(1+\sqrt{2}) + \sqrt{2} &= 0 \\ D &= (1+\sqrt{2})^2 - 4\sqrt{2} = 1 + 2\sqrt{2} + 2 - 4\sqrt{2} = 3 - 2\sqrt{2} = 1 + 2 - 2\sqrt{2} = (1-\sqrt{2})^2 \\ t_1 &= (1+\sqrt{2}-1+\sqrt{2})/2 = 2\sqrt{2}/2 = \sqrt{2} \\ t_2 &= (1+\sqrt{2}+1-\sqrt{2})/2 = 2/2 = 1 \\ \sin 2x + \cos 2x &= 1 \end{aligned}$$

$$\begin{aligned} \cos 2x &= 1 - 2\sin^2 x \\ \sin 2x + 1 - 2\sin^2 x &= 1 \\ 2\sin^2 x - \sin 2x &= 0 \\ 2\sin^2 x - 2\sin x \cos x &= 0 \\ \sin^2 x - \sin x \cos x &= 0 \\ \sin x(\sin x - \cos x) &= 0 \\ \begin{cases} \sin x = 0 \\ \sin x - \cos x = 0 \end{cases} & \mid \cos x \\ x_1 &= P_n \\ \operatorname{tg} x &= 1 \\ x &= P/4 + P_n \\ \mathbf{P/4 + P_n; P_n.} \end{aligned}$$

$$\begin{aligned} \sin 2x + \cos 2x &= \sqrt{2} \\ \sin 2x \cdot 1 + \cos 2x \cdot 1 &= \sqrt{2} \cdot (1^2 + 1^2) \cdot (\sin 2x \cdot 1/\sqrt{2} + \cos 2x \cdot 1/\sqrt{2}) = \sqrt{2} \cdot (\sin 2x \cdot \cos P/4 + \cos 2x \cdot \sin P/4) = \sqrt{2} \cdot (\sin(2x + P/4)) \\ \text{Пусть } 1/\sqrt{2} \text{ при } \sin &= \cos t, \text{ а при } \cos = \sin t \\ \cos t &= 1/\sqrt{2} \\ \sin t &= 1/\sqrt{2} \\ t &= P/4 \\ \sin 2x + \cos 2x &= \sqrt{2} \cdot (\sin(2x + P/4)) \\ \sqrt{2} \cdot \sin(2x + P/4) &= \sqrt{2} \mid : \sqrt{2} \\ \sin(2x + P/4) &= 1 \\ 2x + P/4 &= P/2 + 2P_n \\ 2x &= P/4 + 2P_n \\ \mathbf{x = P/8 + P_n} \\ \text{Ответ: } & \mathbf{P/4 + P_n; P_n; P/8 + P_n.} \end{aligned}$$



$$A \sin kx + B \cos kx = C$$

Половинные углы  
и дальше делишь  
на  $\cos^2$  или  $\sin^2$

Метод  
вспомогат  
аргумента