

$$\begin{aligned} \sin(x+y) &= \sin x \cdot \cos y + \sin y \cdot \cos x \\ \sin(x-y) &= \sin x \cdot \cos y - \sin y \cdot \cos x \\ \cos(x+y) &= \cos x \cdot \cos y - \sin y \cdot \sin x \\ \cos(x-y) &= \cos x \cdot \cos y + \sin y \cdot \sin x \end{aligned}$$

Формулы двойных углов

$$\begin{aligned} \sin 2x &= \sin(x+x) = \sin x \cdot \cos x + \sin x \cdot \cos x = 2 \cdot \sin x \cdot \cos x \\ \cos 2x &= \cos(x+x) = \cos x \cdot \cos x - \sin x \cdot \sin x = \cos^2 x - \sin^2 x = \\ &= 1 - \sin^2 x - \sin^2 x = 1 - 2 \cdot \sin^2 x = \\ &= \cos^2 x - (1 - \cos^2 x) = 2 \cdot \cos^2 x - 1 \end{aligned}$$

Формулы понижения степени

$$\begin{aligned} \cos 2x &= 1 - 2 \cdot \sin^2 x \\ \cos 2x &= 2 \cdot \cos^2 x - 1 \\ \sin^2 x &= (1 - \cos 2x) / 2 \\ \cos^2 x &= (\cos 2x + 1) / 2 \end{aligned}$$

Формулы тройных углов

$$\begin{aligned} \sin 3x &= \sin(2x+x) = \sin 2x \cdot \cos x + \sin x \cdot \cos 2x = 2 \cdot \sin x \cdot \cos^2 x + (1 - 2 \cdot \sin^2 x) \cdot \sin x = 2 \cdot \sin x \cdot (1 - \sin^2 x) + (1 - 2 \cdot \sin^2 x) \cdot \sin x = 2 \cdot \sin x - 2 \cdot \sin^3 x + \sin x - 2 \cdot \sin^3 x = -4 \cdot \sin^3 x + 3 \cdot \sin x \\ \sin^3 x &= (3 \cdot \sin x - \sin 3x) / 4 \\ \cos 3x &= \cos(2x+x) = \cos 2x \cdot \cos x - \sin 2x \cdot \sin x = (2 \cdot \cos^2 x - 1) \cdot \cos x - 2 \cdot \sin x \cdot \cos x \cdot \sin x = (2 \cdot \cos^2 x - 1) \cdot \cos x - 2 \cdot (1 - \cos^2 x) \cdot \cos x = 2 \cdot \cos^3 x - \cos x - 2 \cdot \cos x + 2 \cdot \cos^3 x = -3 \cdot \cos x + 4 \cdot \cos^3 x \\ \cos^3 x &= (\cos 3x + 3 \cdot \cos x) / 4 \end{aligned}$$

$$5 \cdot \cos(29) / \sin(61) = 5 \cdot \cos(90 - 61) / \sin(61) = 5$$