

$$\sin^2 x + \cos^2 x = 1$$

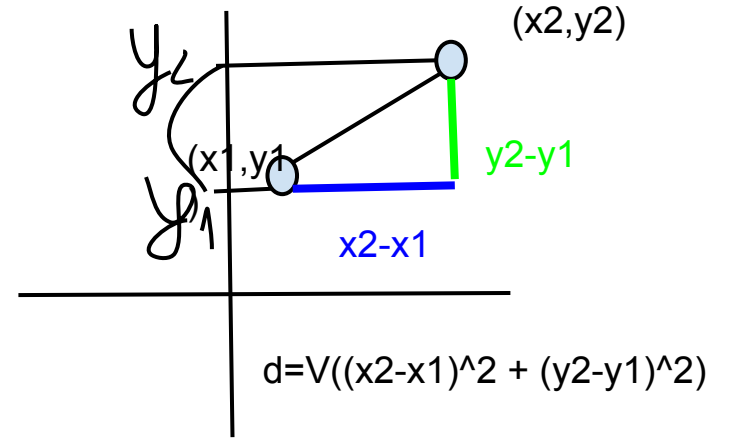
$$\begin{aligned} \sin(x+y) &= \sin x \cos y + \sin y \cos x \\ \sin(x-y) &= \sin x \cos y - \sin y \cos x \\ \cos(x+y) &= \cos x \cos y - \sin x \sin y \\ \cos(x-y) &= \cos x \cos y + \sin x \sin y \end{aligned}$$

Формулы двойных углов

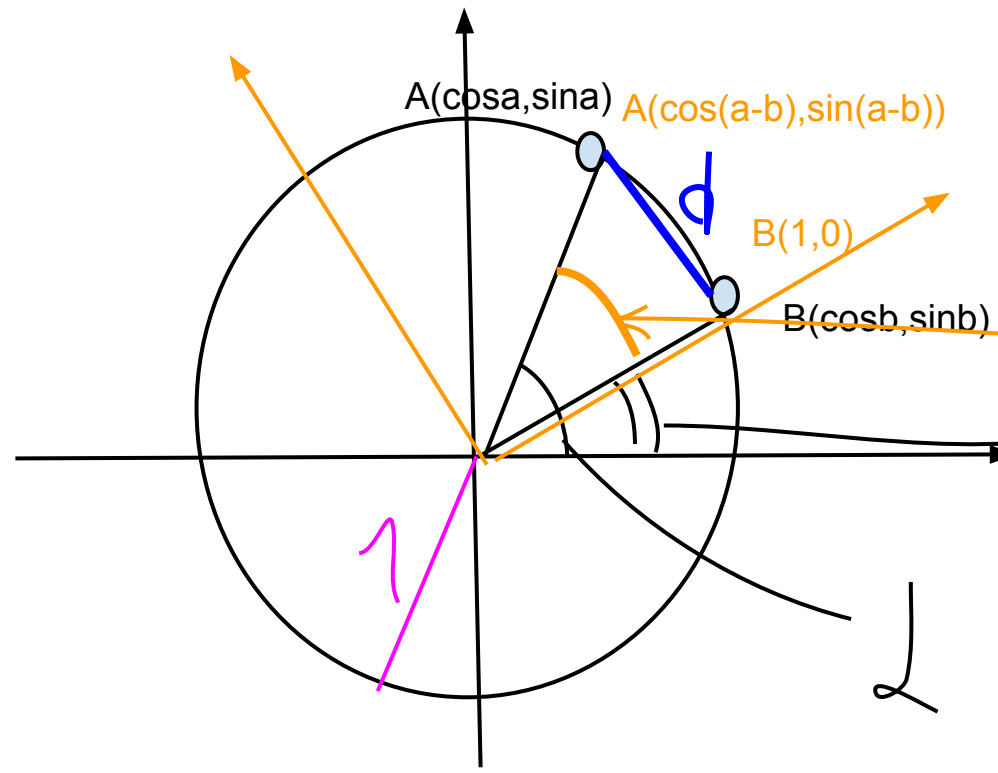
$$\begin{aligned} \sin 2x &= 2 \sin x \cos x \\ \cos 2x &= \cos^2 x - \sin^2 x = 1 - 2 \sin^2 x = 2 \cos^2 x - 1 \end{aligned}$$

Формулы понижения степени

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



не по человечески



$$\begin{aligned} d^2 &= (\cos b - \cos a)^2 + (\sin b - \sin a)^2 = \cos^2 b + \cos^2 a - 2 \cos b \cos a + \sin^2 b - 2 \sin b \sin a + \sin^2 a = \\ &= 2 (1 - \cos b \cos a - \sin b \sin a) \end{aligned}$$

$\alpha - \beta$

$$\begin{aligned} d^2 &= (\cos(a-b) - 1)^2 + (\sin(a-b))^2 = \cos^2(a-b) - 2 \cos(a-b) + 1 + \sin^2(a-b) = 2 - 2 \cos(a-b) = 2(1 - \cos(a-b)) \end{aligned}$$

$$\begin{aligned} 2 (1 - \cos b \cos a - \sin b \sin a) &= 2(1 - \cos(a-b)) \\ \cos(a-b) &= \cos b \cos a + \sin b \sin a \end{aligned}$$