$y = \underbrace{a\,\text{sen}x + b\cos x} + c \quad \Leftrightarrow \quad y = \underbrace{A\,\text{sen}(x+\varphi)} + B$

$A = \sqrt{a^2+b^2}$

$I = [1-\sqrt{6};\ 1+\sqrt{6}]$

$P\left(\frac{\pi}{2}; 2\right)$

$D = \mathbb{R}$

$CD = [B-A;\ B+A]$

$y = A\,\text{sen}(x+\varphi) + B$

Questa funzione ha per codominio l'intervallo $[B-A;\ B+A]$

$y = a\,\text{sen}x + b\cos x + c \qquad P\left(\frac{\pi}{2}; 2\right)$

$$y = \sqrt{a^2+b^2}\left(\underbrace{\frac{a}{\sqrt{a^2+b^2}}}_{\cos\varphi}\,\text{sen}x + \underbrace{\frac{b}{\sqrt{a^2+b^2}}}_{\text{sen}\,\varphi}\cos x\right) + c \qquad \text{sen}(x+\varphi)$$

$$\begin{cases} c - \sqrt{a^2+b^2} = 1-\sqrt{6} \\ c + \sqrt{a^2+b^2} = 1+\sqrt{6} \\ 2 = a + c \end{cases}$$

$R_1 + R_2$: $2c = 2 \to c = 1$

R_1: $1 - \sqrt{a^2+b^2} = 1-\sqrt{6}$

R_3: $a = 1$

$$\begin{cases} c = 1 \\ a = 1 \\ \sqrt{1+b^2} = \sqrt{6} \to 1+b^2 = 6 \quad b^2 = 5 \quad b = \pm\sqrt{5} \end{cases}$$

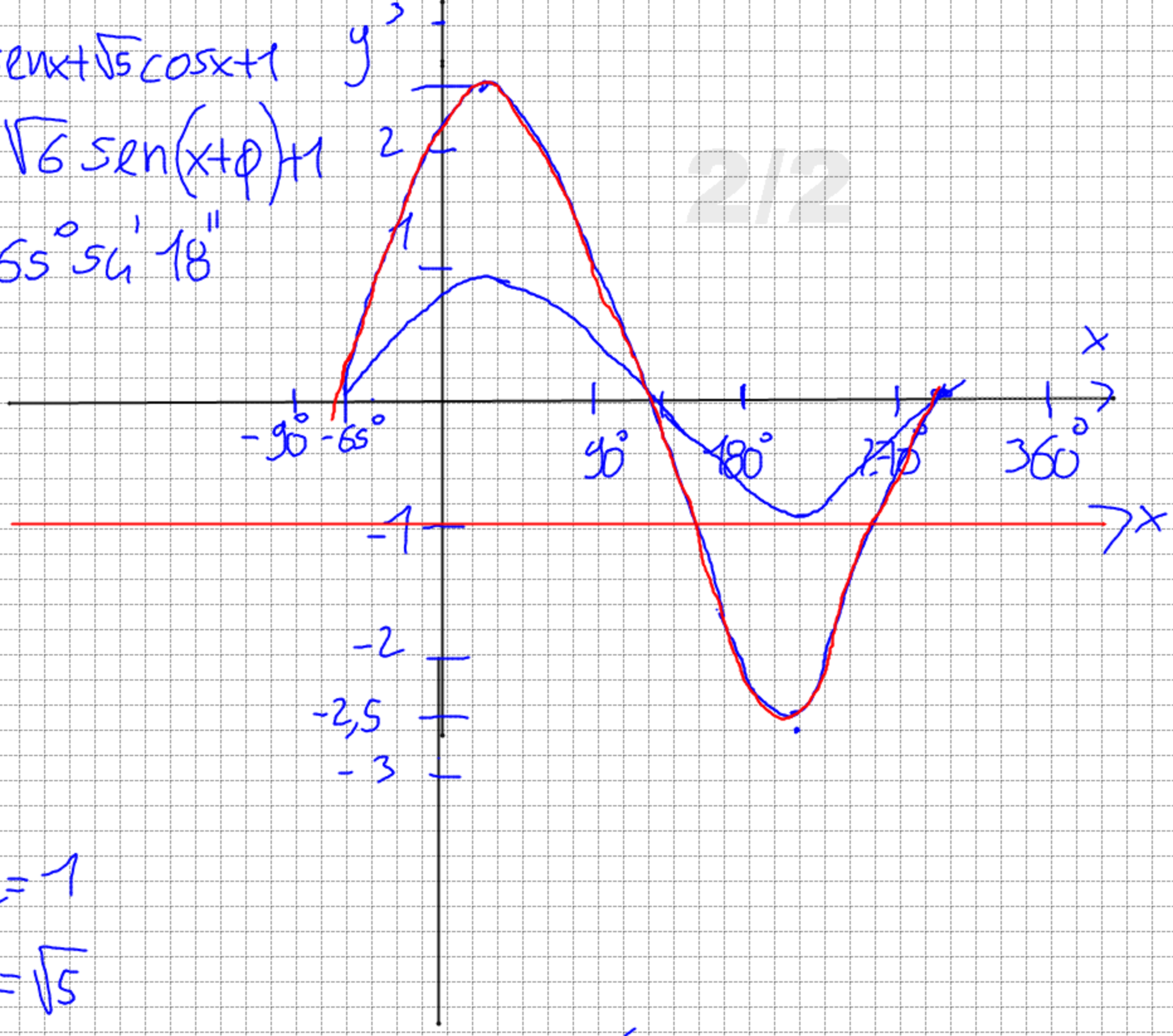
$\to \quad y = \text{sen}x + \sqrt{5}\cos x + 1$

$y = \text{sen}x - \sqrt{5}\cos x + 1$

$y = \operatorname{sen} x + \sqrt{5}\cos x + 1$

$y = \sqrt{6}\operatorname{sen}(x+\varphi) + 1$

$\varphi = 65^\circ 54' 18''$



$a = 1$

$b = \sqrt{5}$

$\sqrt{1+5} = \sqrt{6}$

$y = \sqrt{6}\left(\frac{1}{\sqrt{6}}\operatorname{sen} x + \frac{\sqrt{5}}{\sqrt{6}}\cos x\right) + 1$

$y = \sqrt{6}\left(\frac{\sqrt{6}}{6}\operatorname{sen} x + \frac{\sqrt{30}}{6}\cos x\right) + 1$

$\alpha \quad \alpha$ ∴

$\varphi = 65^\circ 54' 18''$

$y = \sqrt{6}\operatorname{sen}(x+\varphi) + 1$