

AUFGABEN

$$\text{8. } \frac{x \cdot (3 + 2x)}{6 - 2x} \rightarrow 1 - x$$

I. Lösen Sie das folgende lineare Gleichungssystem grafisch.

$$\text{a) } \begin{cases} 2x - y = -7 \\ 3x + 4y = 6 \end{cases} \quad \text{b) } \begin{cases} y - 2x = 4 \\ x + 3y = -9 \end{cases}$$

II. Sie die folgenden Gleichungssysteme. Wenden Sie insgesamt 3 verschiedene Verfahren an.

$$\text{a) } \begin{cases} x + 3y = 25 \\ 4x - y = 22 \end{cases} \quad \text{b) } \begin{cases} -5 = 0,25y + 0,5x \\ 2y + 4x = 100 \end{cases} \quad \text{c) } \begin{cases} \frac{1}{2}x - \frac{1}{5}y = \frac{1}{12} \\ 2y - \frac{3}{8}x = \frac{9}{4} \end{cases}$$

$$\text{d) } \begin{cases} 3y - 2x = 13 \\ 8x + 4y = -4 \end{cases} \quad \text{e) } \begin{cases} 2y = 1 - 0,5x \\ 0,25x = 0,6 - y \end{cases} \quad \text{f) } \begin{cases} \frac{1}{3}y + \frac{1}{6}x = \frac{1}{15} \\ \frac{3}{2}x = \frac{3}{5} - 3y \end{cases}$$

$$c) \begin{cases} 12x - 15y = 112 \\ 2y - 3/8x = 9/4 \end{cases} \begin{matrix} \cdot 60 \\ \cdot 8 \end{matrix}$$

$$\begin{cases} 30x - 12y = 5 \\ 16y - 3x = 18 \end{cases} \quad | \cdot (10) \quad \curvearrowright$$

$$\begin{cases} 16y - 3x = 18 \\ 148y \quad 0 = 185 \end{cases} \quad y = \frac{185}{148} = 5/4$$

$$\begin{aligned} 16 \cdot 5/4 - 3x &= 18 \\ 20 - 3x &= 18 \\ x &= 2/3 \end{aligned}$$

$$S(2/3, 5/4)$$

$$\left| \begin{array}{ccc|c} -x & +2y & -3z & = -8 \\ 2x & -y & +3z & = 7 \\ 4x & +3y & -z & = -3 \end{array} \right| \quad \text{Pivot } \left(\begin{array}{c} 1 \cdot 2 \\ 1 \cdot 4 \end{array} \right)$$

$$\left| \begin{array}{ccc|c} -x & +2y & -3z & = -8 \\ 0 & 3y & -3z & = -9 \\ 0 & 11y & -13z & = -35 \end{array} \right| \quad \begin{array}{l} 1/3 \\ y - z = -3 \\ y = z - 3 \end{array}$$

$-x - 4y - 3z = -8 \quad x = 1$
 $y = -2$

$$11 \cdot (z - 3) - 13z = -35$$

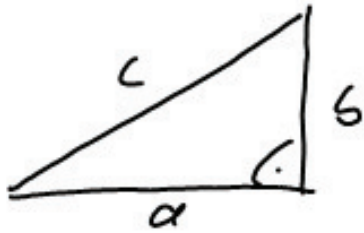
$$11z - 33 - 13z = -35$$

$$-2z = -2$$

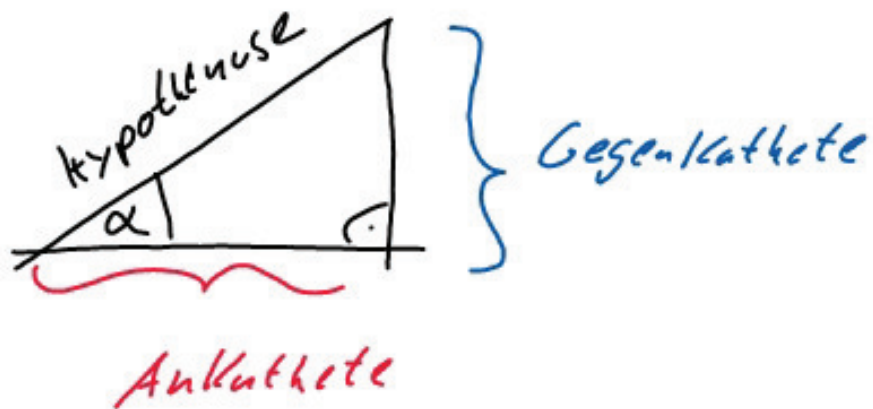
$$z = 1$$

$$S(A \mid -2 \mid 1)$$

Trigonometrie



$$c^2 = a^2 + b^2$$

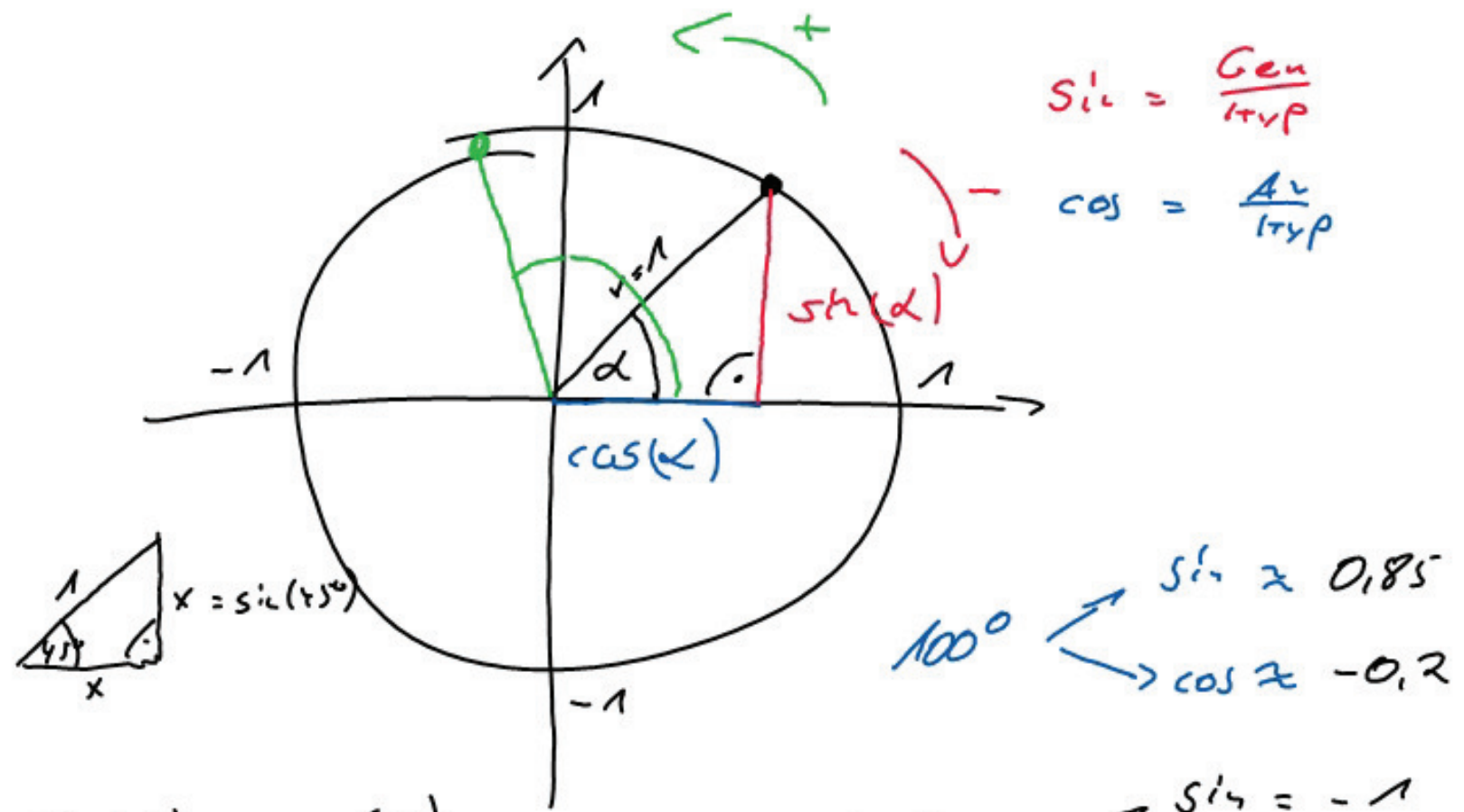


$$\sin \alpha = \frac{\text{Gegenk.}}{\text{Hyp.}}$$

$$\cos \alpha = \frac{\text{Ank.}}{\text{Hyp.}}$$

nicht rechtwinklig: SINUS: $\frac{\sin \alpha}{a} = \frac{\sin \beta}{b} = \frac{\sin \gamma}{c}$

COSINUS: $a^2 = b^2 + c^2 - 2bc \cos(\alpha)$



$$\sin = \frac{\text{Gen}}{r_{yp}}$$

$$\cos = \frac{Av}{r_{yp}}$$

$$100^\circ \begin{cases} \nearrow \sin \approx 0,85 \\ \searrow \cos \approx -0,2 \end{cases}$$

$$-2,5 \pi \begin{cases} \nearrow \sin = -1 \\ \searrow \cos = 0 \end{cases}$$

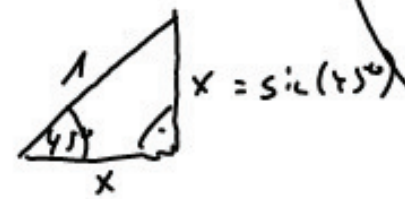
$$\sin(\alpha) = \cos(\alpha)$$

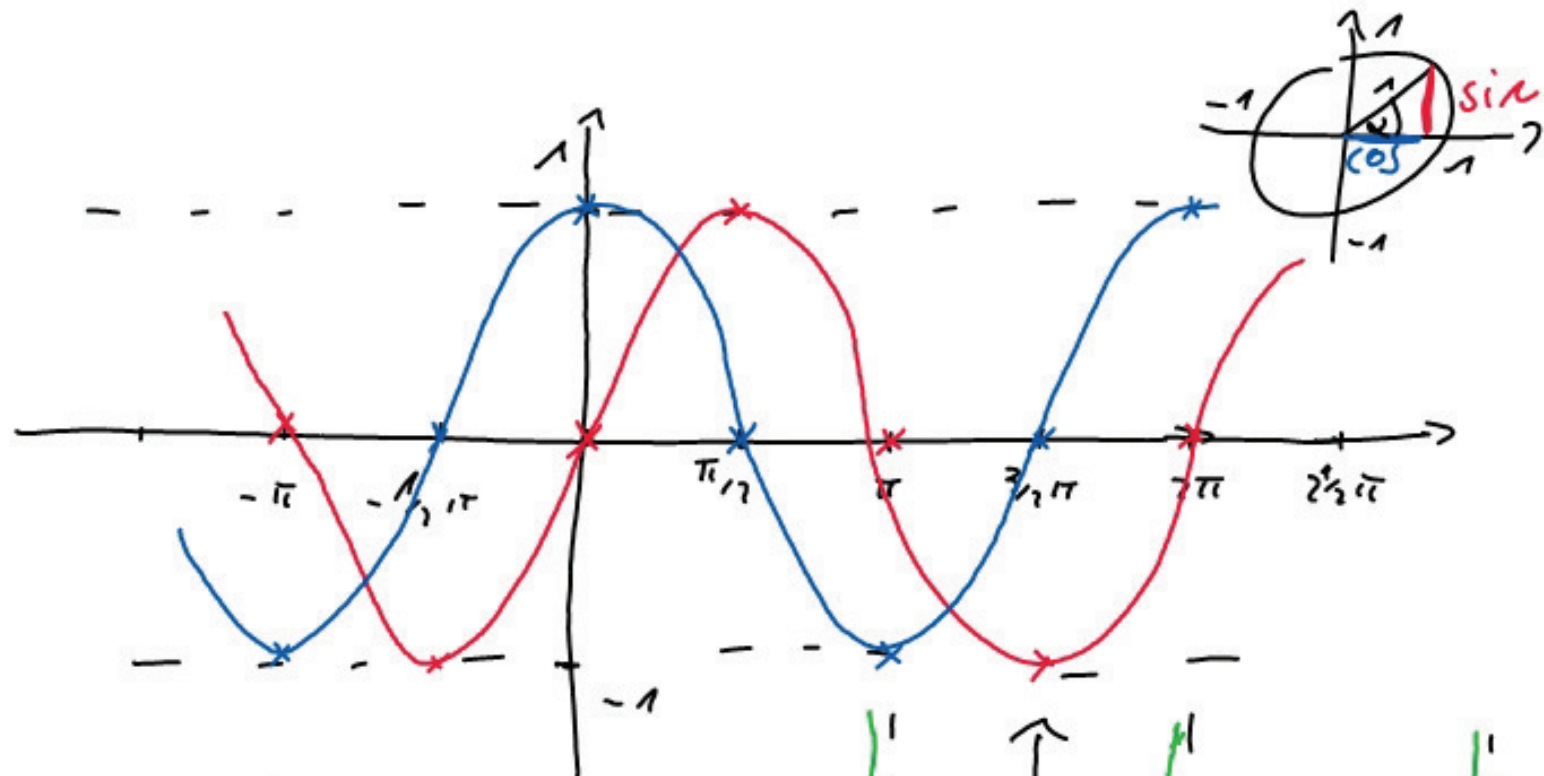
$$\alpha = 45^\circ ; 225;$$

$$\sin(45^\circ) \Rightarrow x^2 + x^2 = 1^2$$

$$2x^2 = 1$$

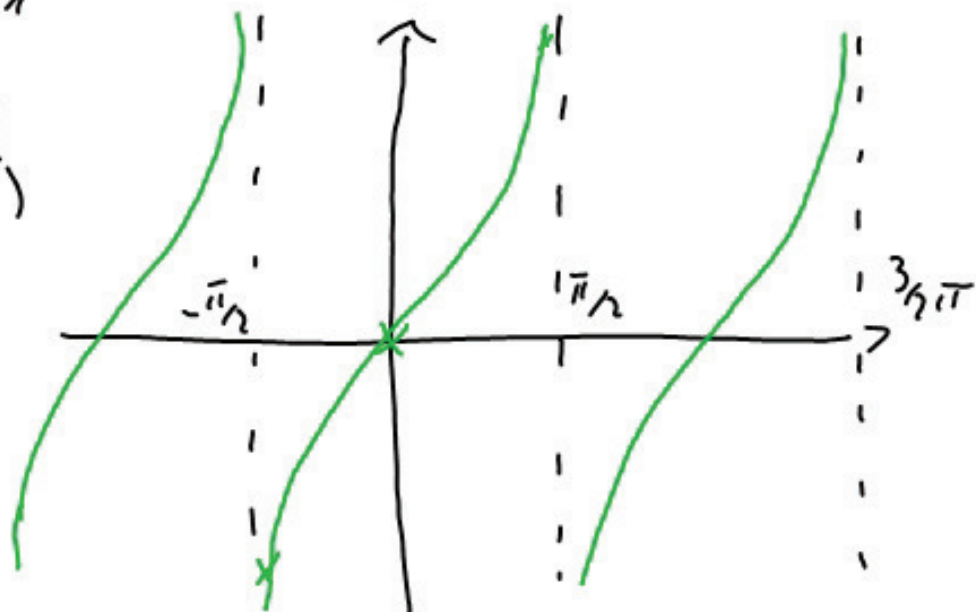
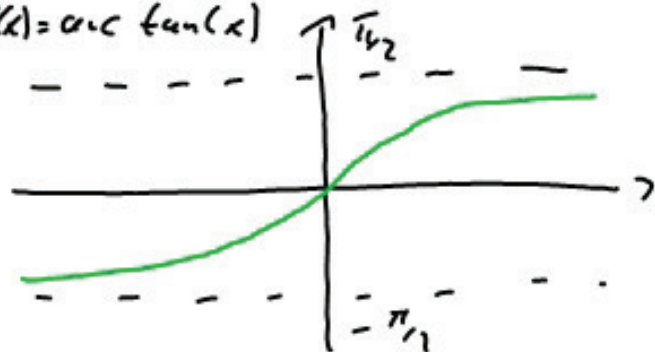
$$x = \frac{1}{\sqrt{2}}$$





$$\tan = \frac{\text{Gegenseite}}{\text{An}} = \frac{\sin(x)}{\cos(x)}$$

$$f(x) = \sin \tan(x)$$



$$f(x) = \sin(3x + 1,5\pi) \rightarrow 0$$

$$\sin(3x) \cdot \cos(1,5\pi) + \cos(3x) \cdot \sin(1,5\pi)$$

$$1,5\pi = 3,2\pi$$

↓
(-1)

$$f(x) = -\cos(3x)$$

$$2x - 4,5\pi$$

$$g(x) = \cos(-4,5\pi + 2x) \rightarrow 0$$

$$\cos(2x) \cdot \cos(4,5\pi) + \sin(2x) \cdot \sin(4,5\pi) \nearrow \nearrow$$

$$4,5\pi = \pi/2$$

$$g(x) = \sin(2x)$$