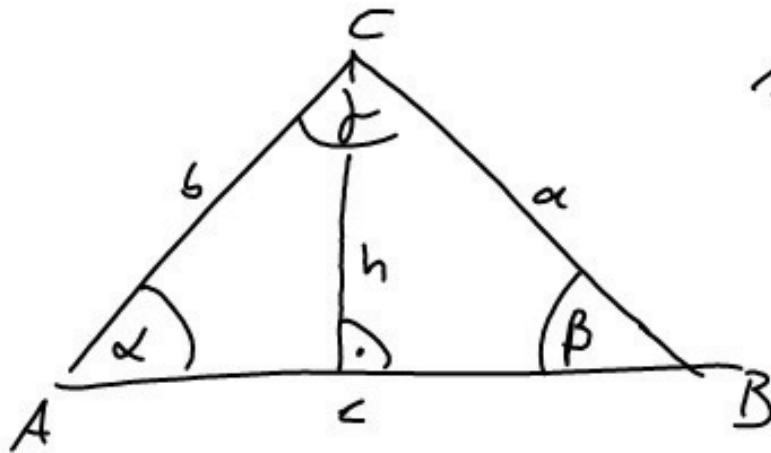


$$\cos(\alpha + \beta) = \cos(\alpha) \cdot \cos(\beta) - \sin(\alpha) \cdot \sin(\beta)$$



$$u = a + b + c$$

$$A = \frac{1}{2} \cdot g \cdot h$$

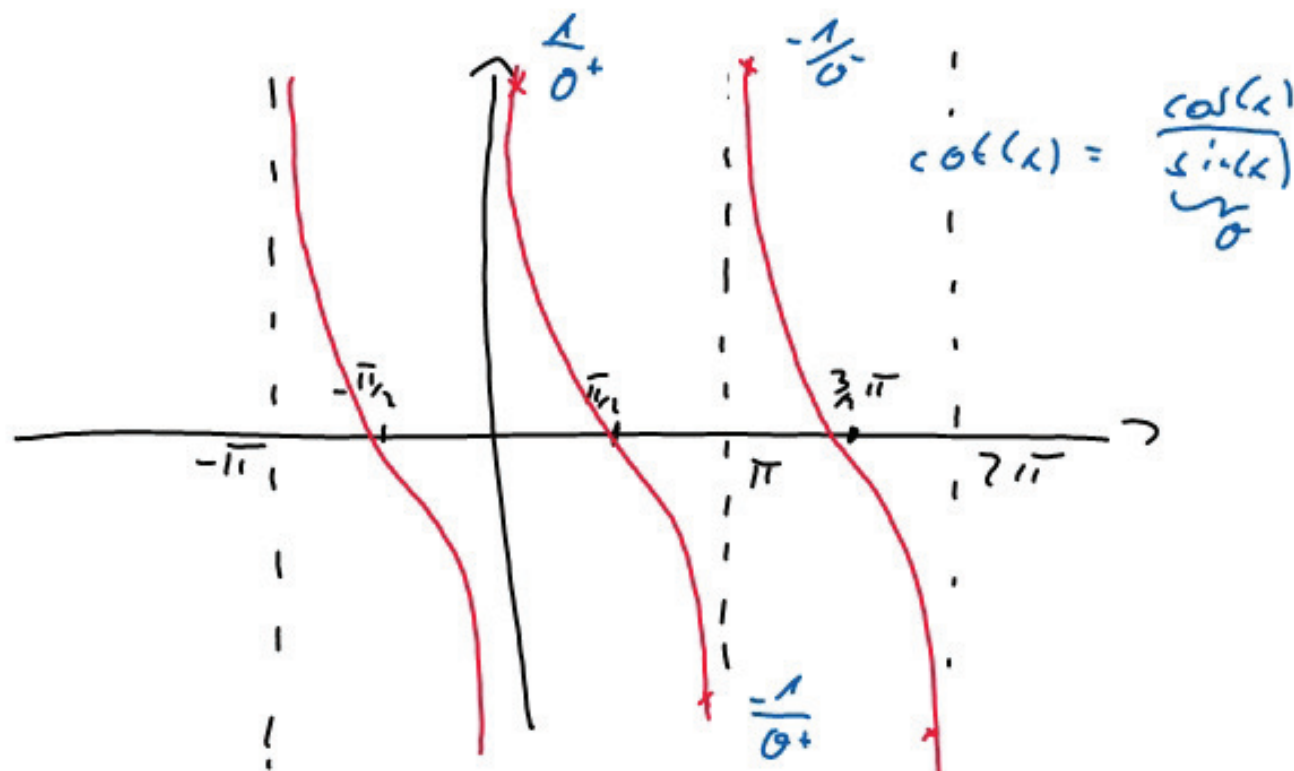
I. a)  $-\sin(2x)$

b)  $\cos(2,5x)$

c)  $\cos(48x)$

d)  $\cos(3x)$

II.



III.



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

$$c^2 = \sqrt{a^2 - b^2}$$

$$c = \sqrt{25 - 9} = \sqrt{16} = 4$$

$$\cos(\gamma) = \frac{b}{a} = \frac{3}{5}$$

$$\gamma = \arccos\left(\frac{3}{5}\right) = 53^\circ$$

$$\cos(\beta) = \frac{c}{a} = \frac{4}{5}$$

$$\beta = \arccos\left(\frac{4}{5}\right) = 36^\circ$$

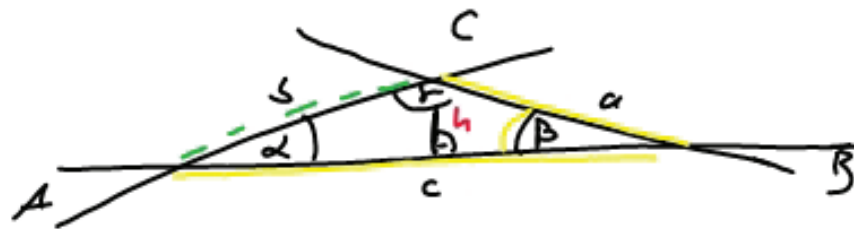
s)  $\gamma = 90^\circ$      $\alpha = 30^\circ$      $\beta = 60^\circ$

$$a = 3 \quad ; \quad b = 5,2$$



IV

$$a = 8 \text{ dm} \quad c = 9,1 \text{ dm} \quad \beta = 20^\circ$$



$$u = 20,26$$

$$b^2 = a^2 + c^2 - 2 \cdot a \cdot c \cdot \cos(\beta) \Rightarrow b = 3,16$$

$$\frac{\sin(\alpha)}{a} = \frac{\sin(\beta)}{b}$$

$$\alpha = 60^\circ$$

$$\gamma = 100^\circ$$

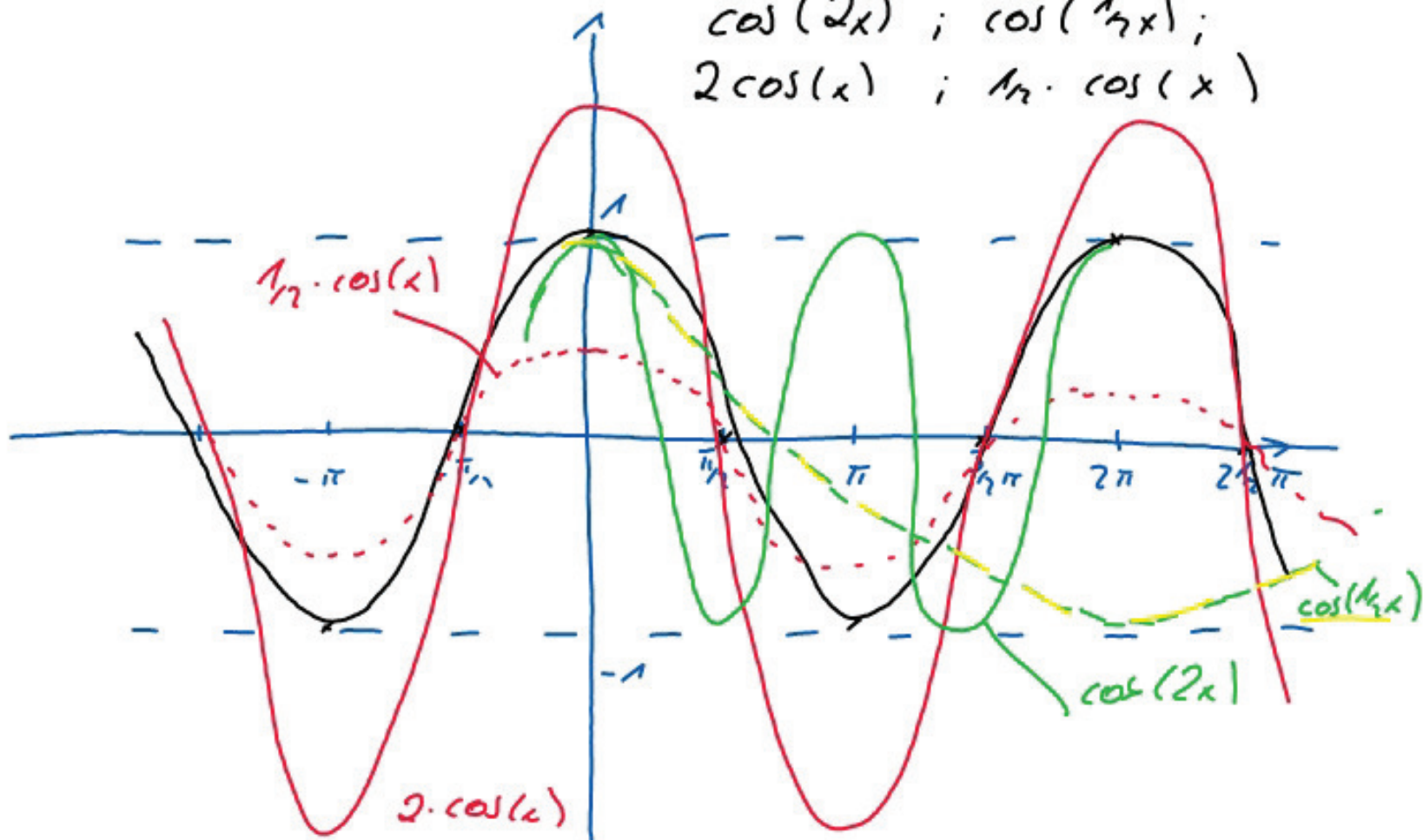
$$A = \frac{1}{2} \cdot g \cdot h$$

$\downarrow$   
c

$$\sin \beta = \frac{h}{a} \Leftrightarrow h = a \cdot \sin(\beta) = 2,73$$

$$A = \underline{\underline{12,45}}$$

$\cos(2x)$  ;  $\cos(\frac{1}{2}x)$  ;  
 $2\cos(x)$  ;  $\frac{1}{2}\cos(x)$



$$g(x) = 2 \cdot \sin\left(\frac{1}{3}x - 2,5\pi\right) + 5$$

$$\sin\left(\frac{1}{3}x\right) \cdot \underbrace{\cos(2,5\pi)}_0 - \cos\left(\frac{1}{3}x\right) \cdot \underbrace{\sin(2,5\pi)}_1$$

$$g(x) = -2 \cdot \cos\left(\frac{1}{3}x\right) + 5$$

$$\text{W: } -2 \cdot [-1; 1] + 5 = [-2; 2] + 5 \Rightarrow y \in [3; 7]$$

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$$\begin{aligned} \cos^2(x) : [-1; 1]^2 &\Rightarrow [-1; 0]^2 \cup [0; 1]^2 \\ &= [0; 1] \end{aligned}$$

Periode

$$P_{\text{NEU}} = \frac{P_{\text{ALT}}}{1/2} = \frac{2\pi}{1/2} = 4\pi$$

$$g(x) = g(x + 4\pi)$$

$$g(x + 4\pi) = -2 \cdot \underbrace{\cos(1/2 \cdot (x + 4\pi))} + 5$$

$$\underbrace{\cos(1/2 x)} \cdot \underbrace{\cos(2\pi)} - \underbrace{\sin(1/2 x)} \cdot \underbrace{\sin(2\pi)}$$

$$-2 \cdot \cos(1/2 x) + 5 = g(x)$$

Symmetrie

$$f(x) = f(-x)$$

$$-2 \cdot \cos(1/2 x) + 5 = -2 \cdot \cos(-1/2 x) + 5 \cdot \frac{-5}{-5} \cdot (-1/2)$$

$$\cos(1/2 x) = \cos(-1/2 x) \quad \checkmark$$