Basal

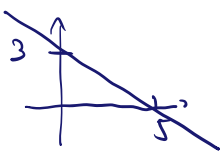
a) $8ab - ba = \underline{\underline{7ab}}$

b) $-2^2 + 3\cdot(4 - 5\cdot 2) = -4 + 3\cdot(4-10) = -4 + 3\cdot(-6) = -4 - 18 = \underline{\underline{-22}}$

c) $-\frac{3}{4}x + 3 \overset{!}{=} 0 \iff 3 = \frac{3}{4}x \iff x = \underline{\underline{4}}$

d) $x^2 - 3x = 0 \iff x(x-3) = 0 \Rightarrow x_1 = \underline{\underline{0}},\ x_2 = \underline{\underline{3}}$

Gerade

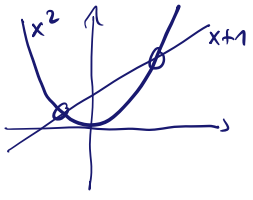


$f(x) = mx + q$

$= mx + 3$

$= -\frac{3}{5}x + 3 \quad = \underline{-\frac{3}{5}x + 3}$

Schnittpunkt



$x^2 = x + 1$

$x^2 - x - 1 = 0$

$\rightarrow x_{1,2} = \frac{1 \pm \sqrt{1+4}}{2} = \underline{\frac{1 \pm \sqrt{5}}{2}} = \begin{cases} \Phi \\ -\varphi \end{cases}$

Alter

x: Alter Juri heute

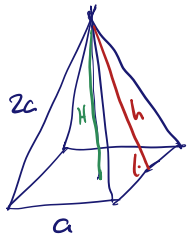
$\rightarrow (x+2) + 4(x+2) = 60$

$5x + 10 = 60$

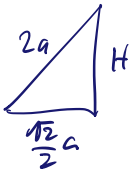
$5x = 50$

$x = \underline{\underline{10}}$ ... ich: $4 \cdot 12 - 2 = \underline{\underline{46}}$

Pyramide



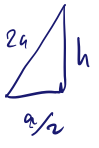
Diag: $\sqrt{a^2 + a^2} = \sqrt{2a^2} = \sqrt{2}a$



$H^2 = (2a)^2 - \left(\frac{\sqrt{2}}{2}a\right)^2$

$= 4a^2 - \frac{1}{2}a^2 = \frac{7}{2}a^2$

$\rightarrow H = \sqrt{\frac{7}{2}}a$



$h^2 = (2a)^2 - \left(\frac{a}{2}\right)^2 = 4a^2 - \frac{1}{4}a^2 = \frac{15}{4}a^2$

$\rightarrow h = \frac{\sqrt{15}}{2}a$

$\rightarrow$ Oberfläche: $a^2 + 4 \cdot \frac{1}{2} \cdot a \cdot \frac{\sqrt{15}}{2}a = a^2 + \sqrt{15}a^2 = \underline{(1+\sqrt{15})a^2}$

Volumen: $\frac{1}{3}a^2 \cdot \sqrt{\frac{7}{2}}a = \underline{\sqrt{\frac{7}{18}}a^3}$