

# 2016-04-26 - Mathe - Testübungsaufgaben

$$2. a) V = \frac{1}{3} \cdot h \cdot (a_1^2 + \sqrt{a_1 \cdot a_2} + a_2) \quad | : \frac{1}{3} h$$

$$3 \frac{V}{h} = a_1 + \sqrt{a_1 \cdot a_2} + a_2 \quad | \cdot 2$$

$$9 \frac{V^2}{h^2} = a_1^2 + a_1 \cdot a_2 + a_2^2 \quad | - 9 \frac{V^2}{h^2}$$

$$0 = a_1^2 + a_1 \cdot a_2 + a_2^2 - 9 \frac{V^2}{h^2}$$

$$a_{1/2} = -\frac{a_2}{2} \pm \sqrt{\left(\frac{a_2}{2}\right)^2 - a_2 + 9 \frac{V^2}{h^2}}$$

$$a_{1/2} = -5 \text{ cm} \pm \sqrt{25 \text{ cm}^2 - 10 \text{ cm} + 4 \cdot 10^6}$$

$$a_1 = 1995,00375 \text{ cm}$$

$$a_2 = -2005,00375 \text{ cm} \quad \text{⚡}$$

$$s = \sqrt{\left(\frac{a_1 \sqrt{2}}{2} - \frac{a_2 \sqrt{2}}{2}\right)^2 + h^2}$$

$$s = 1403,69 \text{ cm}$$

$$\xi = \sqrt{\left(\frac{a_1}{2}\right)^2 + h^2}$$

$$\xi = \sqrt{\left(\frac{a_1 - a_2}{2}\right)^2 + h^2}$$

$$\xi = 992,61 \text{ cm}$$

$$A_0 = a_1^2 + a_2^2 + 4 \cdot \frac{1}{2} \cdot (a_1 + a_2) \cdot \xi$$

$$A_0 = 7.960.481 \text{ cm}^2$$

$$\beta = \cos^{-1} \left( \frac{a_1 - a_2}{2} : h \right)$$

$$\beta =$$

$$\beta = \tan^{-1} \left( \frac{h}{\frac{a_1 - a_2}{2}} \right)$$

$$\beta = 0,97^\circ$$

$$\alpha = \tan^{-1} \left( h : \frac{(a_1 - a_2) \sqrt{2}}{2} \right)$$

$$\alpha = 0,61^\circ$$