LÖSUNG ZU 300:

quadratisches Prisma: $V = a^2 \cdot h$ Hauptbedingung

$d = 2 \cdot \sqrt{3} = \sqrt{a^2 + a^2 + h^2}$ Nebenbedingung

$2 \cdot \sqrt{3} = \sqrt{2a^2 + h^2}$

$\sqrt{12} = \sqrt{2a^2 + h^2}$ /²

$12 = 2a^2 + h^2$

$\frac{12 - h^2}{2} = a^2$

$V(h) = \frac{12-h^2}{2} \cdot h = \frac{12h - h^3}{2}$

$V'(h) = \frac{12 - 3h^2}{2}$

$0 = \frac{12 - 3h^2}{2}$ $/ \cdot 2$

$0 = 12 - 3h^2$ $/ + 3h^2$

$3h^2 = 12$ $/ : 3$

$h^2 = 4$

$h_1 = 2$ $h_2 = -2$ (nicht in Definitionsmenge)

$a^2 = \frac{12 - 4}{2} = 4$

$a_1 = 2$ $a_2 = -2$ (nicht in Definitionsmenge)

Maße des Prismas: a = 2cm h = 2 cm

maximaler Rauminhalt: V = 8 cm²