

Der Lehrsatz des Pythagoras in Körpern

Lösungsblatt

1) $V = a^2 \cdot h$ $2366 = a^2 \cdot 14 \quad /: 14$ $169 = a^2 \quad / \sqrt{}$ $a = 13 \text{ cm}$	$d_1 = \sqrt{a^2 + a^2}$ $d_1 = \sqrt{13^2 + 13^2}$ $d_1 = \sqrt{169 + 169}$ $d_1 = 18,4 \text{ cm}$	$d_1 = \sqrt{a^2 + h^2}$ $d_1 = \sqrt{13^2 + 14^2}$ $d_1 = \sqrt{169 + 196}$ $d_1 = 19, a \text{ cm}$
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2) $h_a = \sqrt{\left(\frac{a}{2}\right)^2 + h^2}$ $h_a = \sqrt{\left(\frac{60}{2}\right)^2 + 80^2}$ $h_a = \sqrt{900 + 6400}$ $h_a = \sqrt{7300} = 85,4 \text{ mm}$	3) $h = \sqrt{h_a^2 - \left(\frac{a}{2}\right)^2}$ $h = \sqrt{91^2 - \left(\frac{70}{2}\right)^2}$ $h = \sqrt{8281 - 1225}$ $h_a = \sqrt{7056} = 84 \text{ cm}$	4) $d = \sqrt{a^2 + b^2}$ $d = \sqrt{17^2 + 26^2}$ $d = \sqrt{289 + 676}$ $d = \sqrt{965}$ $d = 31,064 \dots = 31,1 \text{ cm}$
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5) $d = \sqrt{a^2 + a^2}$ $d = \sqrt{29^2 + 29^2}$ $d = \sqrt{841 + 841}$ $d = \sqrt{1682}$ $d = 41 \text{ cm} \rightarrow \text{Nein!}$	6) $d = \sqrt{l^2 + b^2 + h^2}$ $d = \sqrt{10^2 + 5^2 + 3^2}$ $d = \sqrt{100 + 25 + 9}$ $d = \sqrt{133}$ $d = 11,5 \text{ cm} \rightarrow \text{Ja!}$
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7) $d = \sqrt{l^2 + b^2}$ $d = \sqrt{32^2 + 24^2}$ $d = \sqrt{1024 + 576}$ $d = \sqrt{1600}$ $d = 40 \text{ cm}$	$A = d \cdot h$ $A = 40 \cdot 20$ $A = 800 \text{ cm}^2$	8) $d = \sqrt{l^2 + b^2}$ $d = \sqrt{80^2 + 200^2}$ $d = \sqrt{6400 + 40000}$ $d = \sqrt{46400}$ $d = 215 \text{ cm} \rightarrow \text{Ja!}$
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