

Pythagoras in ebenen Figuren – Lösungen

6) $x = \sqrt{24^2 + 7^2} = \sqrt{576 + 49} = \sqrt{625} = 25 \text{ cm}$ $v = 36 \text{ cm}$ $w = 24 \text{ cm}$

$$A = \frac{(a+c) \cdot h}{2} \rightarrow 1164 = \frac{(a+36) \cdot 24}{2} \quad / : 2 \rightarrow 2328 = (a+36) \cdot 24 \quad / : 24 \rightarrow$$

$$97 = a + 36 \quad / - 36 \rightarrow a = 97 - 36 = 61 \text{ m}$$

$$y = a - v - 7 = 61 - 36 - 7 = 18 \text{ m}$$

$$z = \sqrt{w^2 + y^2} = \sqrt{24^2 + 18^2} = \sqrt{576 + 324} = \sqrt{900} = 30 \text{ m}$$

$$u = 7 + v + y + z + 36 + x = 7 + 36 + 18 + 30 + 36 + 25 = 152 \text{ m}$$

7) $x = \frac{a}{2} = \frac{6,4}{2} = 3,2 \text{ m}$

$$h = \sqrt{a^2 - x^2} = \sqrt{6,4^2 - 3,2^2} = \sqrt{40,96 - 10,24} = \sqrt{30,72} = 5,5 \text{ m}$$

$$u = a + a + a = 3 \cdot a = 3 \cdot 6,4 = 19,2 \text{ m}$$

$$A = \frac{a \cdot h}{2} = \frac{6,4 \cdot 5,5}{2} = \frac{35,2}{2} = 17,6 \text{ m}^2$$

8) $b = \sqrt{d^2 - l^2} = \sqrt{29^2 - 23,2^2} = \sqrt{841 - 538,24} = \sqrt{302,76} = 17,4 \text{ cm}$

$$u = l + b + l + b = 2 \cdot l + 2 \cdot b = 2 \cdot 23,2 + 2 \cdot 17,4 = 46,4 + 34,8 = 81,2 \text{ cm}$$

$$A = l \cdot b = 23,2 \cdot 17,4 = 403,68 \text{ cm}^2$$

9) $1,80 \text{ m} = 180 \text{ cm}$ $d = \sqrt{l^2 + b^2} = \sqrt{180^2 + 90^2} = \sqrt{32\,400 + 8\,100} = \sqrt{40\,500} = 201,2 \text{ cm} \approx 202 \text{ cm}$

10) $A = s^2 \rightarrow 800 = s^2 \quad / \sqrt{} \rightarrow s = \sqrt{800} = 28,3 \text{ cm}$

$$d = \sqrt{s^2 + s^2} = \sqrt{28,3^2 + 28,3^2} = \sqrt{800,89 + 800,89} = \sqrt{1\,601,78} = 40 \text{ cm}$$