

Gesst BM 2P, 20.3.15

①

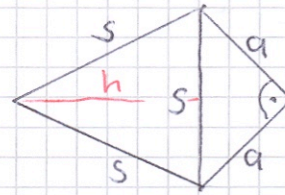
Gleichseitiges Dreieck:

$$h = \frac{s\sqrt{3}}{2}$$

$$A_1 = \frac{1}{2} \cdot s \cdot \frac{s\sqrt{3}}{2}$$

$$= \frac{s^2\sqrt{3}}{4}$$

$$\begin{aligned} &= 24.357 \text{ m}^2 \\ &= \cancel{14.0625 \text{ m}^2} \end{aligned}$$



$$s = 7.5 \text{ m}$$

A_2 : rechth. gleichschenkeligs Dreieck ("halbes Quadrat")

$$a \cdot \sqrt{2} = s \Rightarrow a = \frac{s}{\sqrt{2}} = \frac{s\sqrt{2}}{2}$$

$$A_2 = \frac{1}{2} a \cdot a = \frac{1}{2} a^2 = \frac{1}{2} \left(\frac{s\sqrt{2}}{2} \right)^2$$

$$= \frac{1}{2} \frac{s^2 \cdot 2}{4} = \frac{2s^2}{8} = \frac{s^2}{4} \quad (= 14.0625 \text{ m}^2)$$

$$A_1 + A_2 = \frac{s^2\sqrt{3}}{4} + \frac{s^2}{4} = \frac{s^2}{4} (\sqrt{3} + 1)$$

$$\approx 38.4195 \text{ m}^2$$

$$\approx \underline{\underline{38.42 \text{ m}^2}}$$

Umfang:

$$U = 2a + 2s = 2 \frac{s\sqrt{2}}{2} + 2s$$

$$= s \cdot \sqrt{2} + 2s = s(2 + \sqrt{2}) =$$

$$\approx 25.6066 \text{ m}$$

$$\approx \underline{\underline{25.61 \text{ m}}}$$

2

$$h^2 = (3s)^2 - s^2$$

$$= 9s^2 - s^2$$

$$h^2 = 8s^2$$

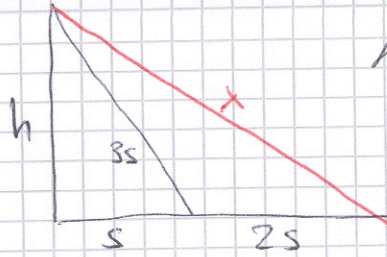
$$\rightarrow h^2 + (s + 2s)^2 = x^2$$

$$8s^2 + (3s)^2 = x^2$$

$$17s^2 = x^2 \quad \Rightarrow \quad x = \underline{\underline{5\sqrt{17} \text{ cm}}}$$

$$\approx 10\sqrt{17} \text{ m}$$

$$\approx \underline{\underline{41.2311 \text{ cm}}}$$



(in Zahlen!)

$$h = \sqrt{30^2 - 10^2} = \sqrt{800}$$

$$= 20 \cdot \sqrt{2}$$

$$\approx 28.28 \text{ cm}$$

$$x = \sqrt{30^2 + 800}$$

$$= \sqrt{1700} = 10\sqrt{17}$$

$$\approx 41.23$$

3

$$y \cdot \sqrt{2} = x$$

$$y = R$$

$$\Rightarrow x = R\sqrt{2}$$

$$10 - R = x$$

$$10 - R = R\sqrt{2}$$

$$10 = R\sqrt{2} + R$$

$$10 = R(\sqrt{2} + 1)$$

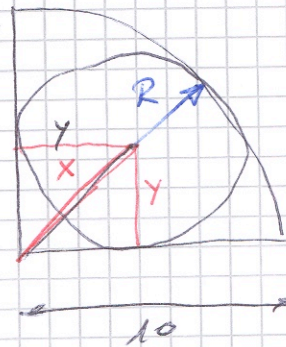
$$\frac{10}{\sqrt{2} + 1} = R \approx$$

$$10(\sqrt{2} - 1)$$

$$\frac{10(\sqrt{2} - 1)}{(\sqrt{2} + 1)(\sqrt{2} - 1)} =$$

$$\frac{10(\sqrt{2} - 1)}{2 - 1} =$$

$$\underline{\underline{10(\sqrt{2} - 1)}}$$



4

$$\text{Radius: } R^2 = \sqrt{4^2 + \left(\frac{S}{2}\right)^2} = \sqrt{16 + (11.5)^2}$$

$$R = \frac{\sqrt{1593}}{2} \approx 12.176 \text{ cm}$$

$$\approx 12.18 \text{ cm}$$

$$x^2 = (R-4)^2 + \left(\frac{S}{2}\right)^2$$

$$\underline{\underline{x \approx 14.11 \text{ cm}}}$$

5

$$A = 156 \text{ cm}^2 = \frac{1}{2} c \cdot h = 6c$$

$$\frac{156}{6} = 26 = c$$

$$c = 26 \text{ cm}$$

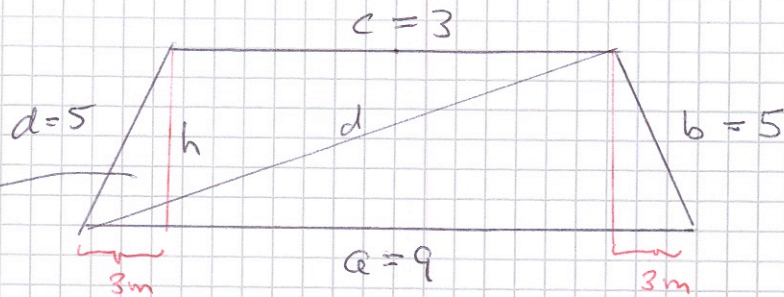
$$d = \sqrt{13^2 - 12^2} = \sqrt{169 - 144} = 5$$

$$a = \sqrt{12^2 + 8^2} \approx 14.42 \text{ cm}$$

$$b = \sqrt{c^2 - a^2} = \sqrt{26^2 - 14.42^2}$$

$$\approx 21.63 \text{ cm}$$

6



$d = b = 5 \text{ m} \rightarrow$ gleichschenkeliges Trapez

$$h = \sqrt{5^2 - 3^2} = \sqrt{16} = \underline{\underline{4 \text{ m}}}$$

$$d = \sqrt{6^2 + 4^2} = \sqrt{52} \approx \underline{\underline{7.21 \text{ m}}}$$