

## Arbeitsblatt 2 , Satz des Pythagoras

1. Berechne den Flächeninhalt A und den Umfang u des schraffierten Quadrates.

$$x^2 = 25^2 + 25^2 \quad | \sqrt{\quad}$$

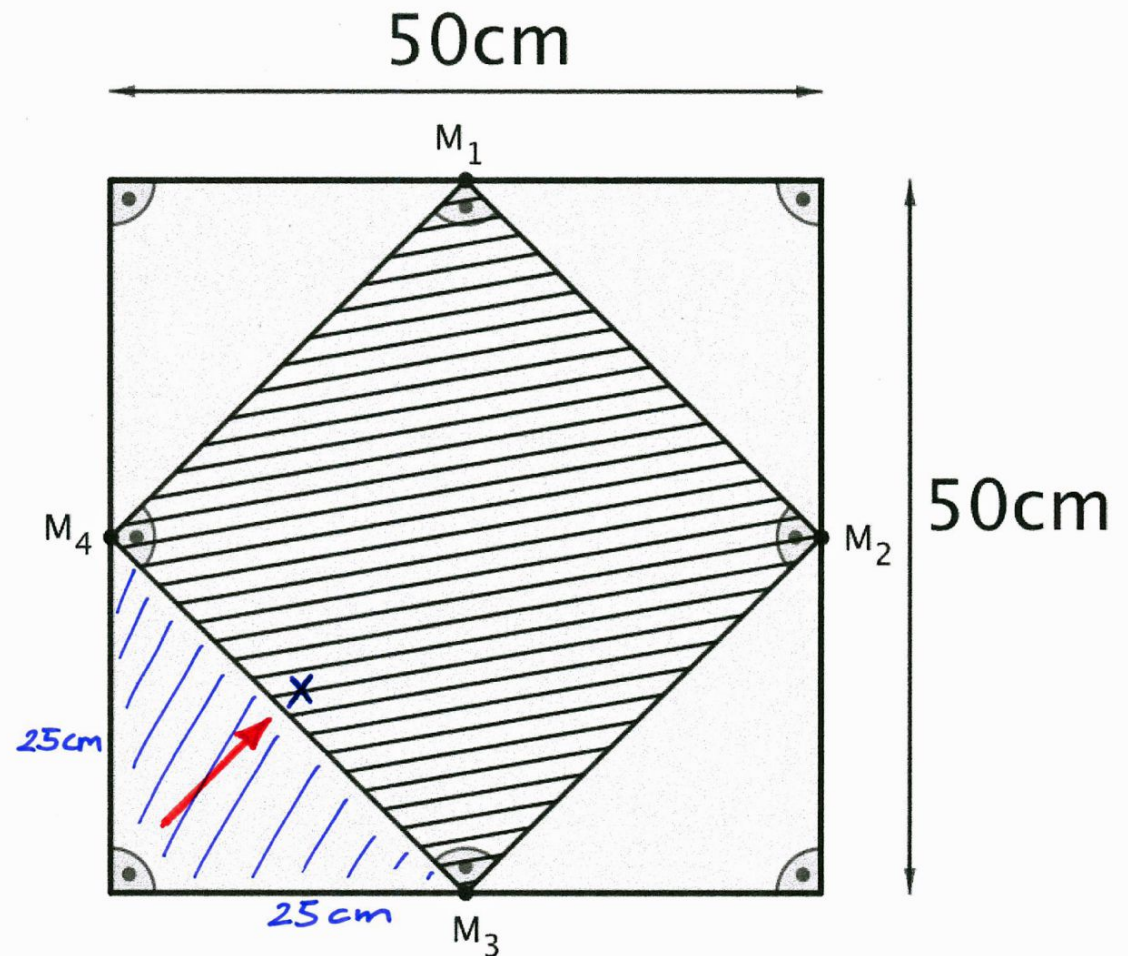
$$x = \sqrt{25^2 + 25^2}$$

$$= \sqrt{625 + 625}$$

$$= \sqrt{1'250} \approx \underline{\underline{35,4 \text{ cm}}}$$

$$\Rightarrow A = x^2 = \sqrt{1'250}^2 \text{ cm}^2$$
$$= \underline{\underline{1'250 \text{ cm}^2}}$$

$$\Rightarrow u = 4 \cdot x \approx \underline{\underline{141,4 \text{ cm}}}$$



2. Berechne den Flächeninhalt A und den Umfang u des grossen Quadrates.

$$s = \underline{\underline{\sqrt{50} \text{ cm}}}$$

$$s^2 = x^2 + x^2 = 2 \cdot x^2 \quad | :2$$

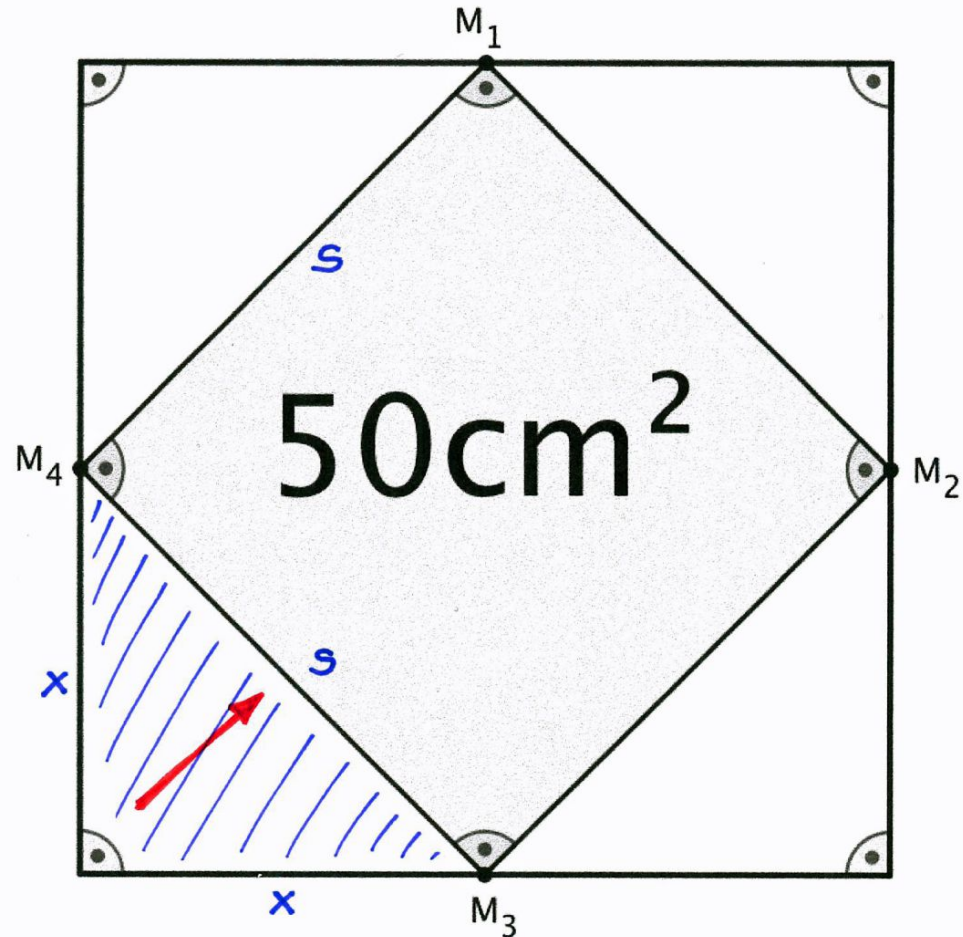
$$\frac{s^2}{2} = x^2 \quad | \sqrt{\quad}$$

$$\sqrt{\frac{s^2}{2}} = x$$

$$x = \sqrt{\frac{\sqrt{50}^2}{2}} = \sqrt{\frac{50}{2}} = \sqrt{25} = \underline{\underline{5 \text{ cm}}}$$

$$\Rightarrow A = (2 \cdot x)^2 = (2 \cdot 5 \text{ cm})^2 = (10 \text{ cm})^2 = \underline{\underline{100 \text{ cm}^2}}$$

$$\Rightarrow u = 4 \cdot (2 \cdot x) = 4 \cdot (2 \cdot 5 \text{ cm}) = 4 \cdot 10 \text{ cm} = \underline{\underline{40 \text{ cm}}}$$



3. Berechne den Flächeninhalt A und den Umfang u des schräffierten Rechtecks.

Pythagoras 1

$$b^2 = 3^2 + 3^2 \quad | \sqrt{\quad}$$

$$b = \sqrt{3^2 + 3^2}$$

$$= \sqrt{9 + 9} = \underline{\underline{118 \text{ cm}}}$$

Pythagoras 2

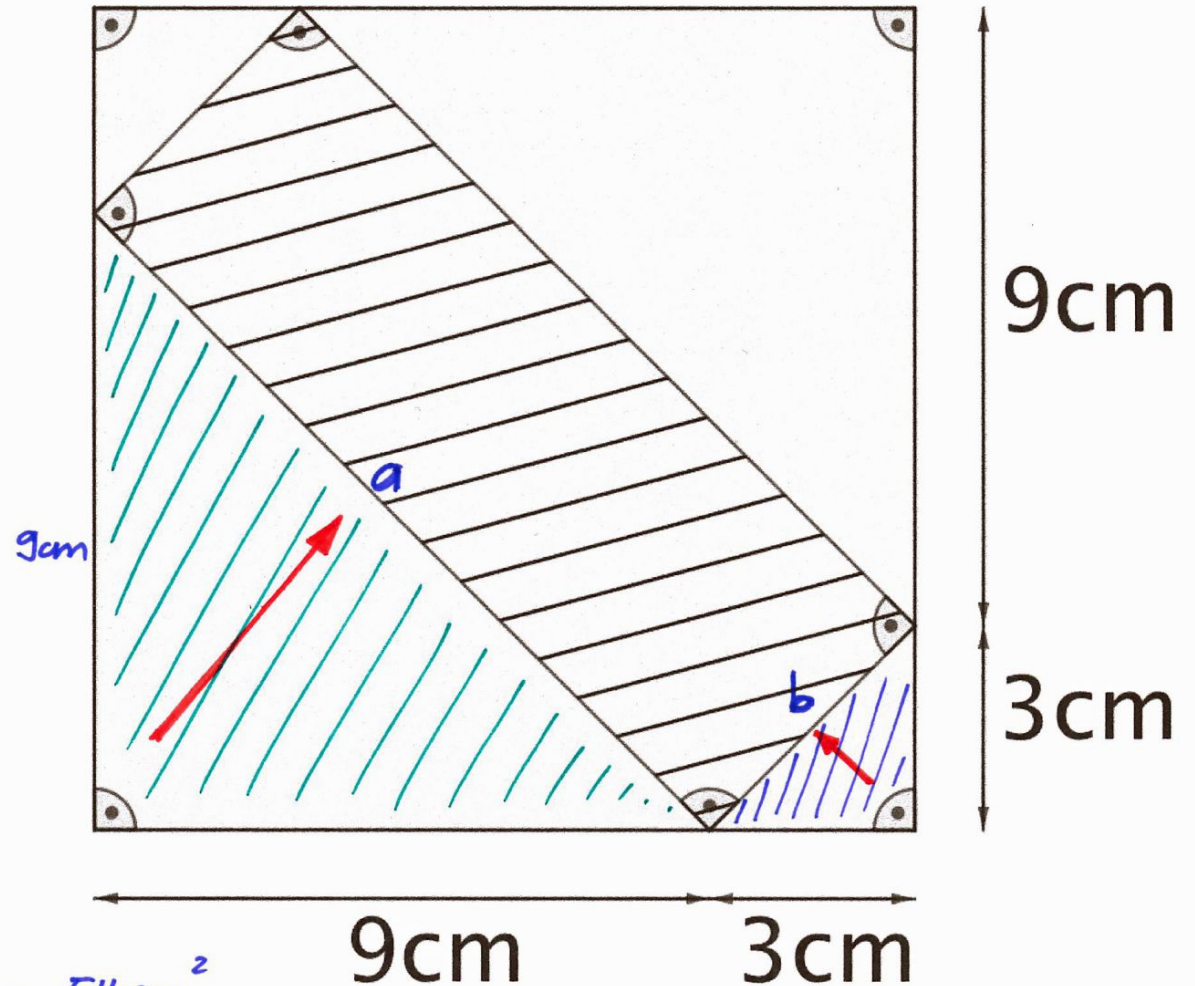
$$a^2 = 9^2 + 9^2 \quad | \sqrt{\quad}$$

$$a = \sqrt{9^2 + 9^2}$$

$$= \sqrt{81 + 81} = \underline{\underline{162 \text{ cm}}}$$

$$\Rightarrow A = a \cdot b = \sqrt{162} \cdot \sqrt{118} \text{ cm}^2 = \underline{\underline{54 \text{ cm}^2}}$$

$$\Rightarrow u = 2 \cdot (a + b) = 2 \cdot (\sqrt{162} + \sqrt{118}) \text{ cm} \approx \underline{\underline{33,9 \text{ cm}}}$$







$$\begin{aligned}
 a &= d - z + d - z + d = 3 \cdot d - 2 \cdot z \\
 &= (3 \cdot \sqrt{18} - 2 \cdot \sqrt{2}) \text{ cm} \approx \underline{\underline{9,9 \text{ cm}}}
 \end{aligned}$$

Pythagoras 4

$$1^2 = e^2 + e^2 = 2 \cdot e^2 \quad | : 2$$

$$\frac{1^2}{2} = e^2 \quad | \sqrt{\quad}$$

$$e = \sqrt{\frac{1^2}{2}} = \sqrt{\frac{1}{2}} = \underline{\underline{0,5 \text{ cm}}}$$

$$b = d - e + d - e = 2 \cdot d - 2 \cdot e = (2 \cdot \sqrt{18} - 2 \cdot \sqrt{0,5}) \text{ cm} \approx \underline{\underline{7,1 \text{ cm}}}$$

$$\Rightarrow A = a \cdot b = \underline{\underline{70 \text{ cm}^2}}$$

$$\Rightarrow u = 2 \cdot (a + b) \approx \underline{\underline{33,9 \text{ cm}}}$$