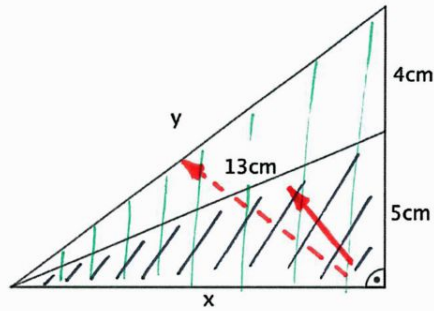


Arbeitsblatt , Satz des Pythagoras

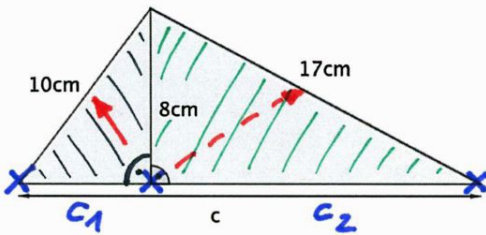
1. Berechne die Länge der Strecke x und y.



$$\begin{aligned} \textcircled{1.} \quad 13^2 &= x^2 + 5^2 \quad | -5^2 \\ 13^2 - 5^2 &= x^2 \quad | \sqrt{} \\ \sqrt{13^2 - 5^2} &= x \\ x &= \sqrt{169 - 25} \\ &= \sqrt{144} \\ &= \underline{\underline{12 \text{ cm}}} \end{aligned}$$

$$\begin{aligned} \textcircled{2.} \quad y^2 &= x^2 + 9^2 \quad | \sqrt{} \\ y &= \sqrt{x^2 + 9^2} \\ &= \sqrt{12^2 + 9^2} \\ &= \sqrt{144 + 81} \\ &= \sqrt{225} \\ &= \underline{\underline{15 \text{ cm}}} \end{aligned}$$

2. Berechne die Länge der Strecke c.

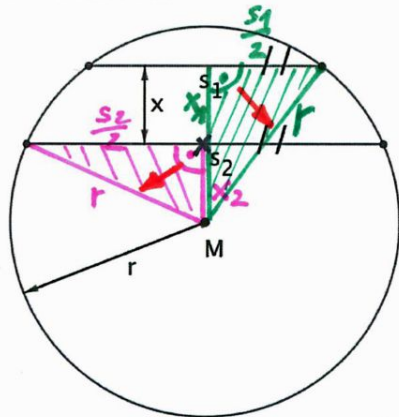


$$\begin{aligned} \textcircled{1.} \quad 10^2 &= c_1^2 + 8^2 \quad | -8^2 \\ 10^2 - 8^2 &= c_1^2 \quad | \sqrt{} \\ \sqrt{10^2 - 8^2} &= c_1 \\ c_1 &= \sqrt{100 - 64} \\ &= \sqrt{36} \\ &= \underline{\underline{6 \text{ cm}}} \end{aligned}$$

$$\begin{aligned} \textcircled{2.} \quad 17^2 &= c_2^2 + 8^2 \quad | -8^2 \\ 17^2 - 8^2 &= c_2^2 \quad | \sqrt{} \\ \sqrt{17^2 - 8^2} &= c_2 \\ c_2 &= \sqrt{289 - 64} \\ &= \sqrt{225} \\ &= \underline{\underline{15 \text{ cm}}} \end{aligned}$$

$$\Rightarrow c = c_1 + c_2 = 6 \text{ cm} + 15 \text{ cm} = \underline{\underline{21 \text{ cm}}}$$

3. Berechne die Länge der Strecke x, wenn $s_1 = 32 \text{ cm}$, $s_2 = 60 \text{ cm}$ und $r = 34 \text{ cm}$ ist.



$$\begin{aligned} \textcircled{1.} \quad r^2 &= x_2^2 + \left(\frac{s_2}{2}\right)^2 \\ 34^2 &= x_2^2 + 30^2 \quad | -30^2 \\ 34^2 - 30^2 &= x_2^2 \quad | \sqrt{} \\ \sqrt{34^2 - 30^2} &= x_2 \\ x_2 &= \sqrt{1156 - 900} \\ &= \sqrt{256} \\ &= \underline{\underline{16 \text{ cm}}} \end{aligned}$$

$$\begin{aligned} \textcircled{2.} \quad r^2 &= x_1^2 + \left(\frac{s_1}{2}\right)^2 \\ 34^2 &= x_1^2 + 16^2 \quad | -16^2 \\ 34^2 - 16^2 &= x_1^2 \quad | \sqrt{} \\ \sqrt{34^2 - 16^2} &= x_1 \\ x_1 &= \sqrt{1156 - 256} \\ &= \sqrt{900} \\ &= \underline{\underline{30 \text{ cm}}} \end{aligned}$$

$$\Rightarrow x = x_1 - x_2 = 30 \text{ cm} - 16 \text{ cm} = \underline{\underline{14 \text{ cm}}}$$