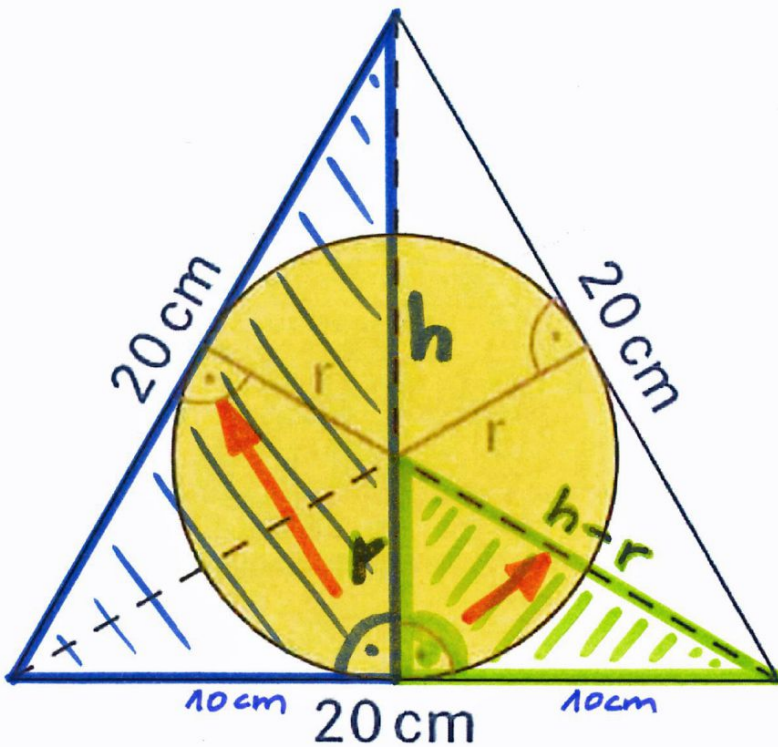


Zusatzaufgabe ‚Satz des Pythagoras‘

Berechne den Radius r des Inkreises.



● Pythagoras 1 :

$$\begin{aligned} 20^2 &= h^2 + 10^2 && | -10^2 \\ 20^2 - 10^2 &= h^2 && | \sqrt{\quad} \\ \sqrt{20^2 - 10^2} &= h \\ h &= \sqrt{400 - 100} = \underline{\underline{\sqrt{300} \text{ cm}}} \end{aligned}$$

● Pythagoras 2 :

$$\begin{aligned} (h-r)^2 &= r^2 + 10^2 \\ (h-r) \cdot (h-r) &= r^2 + 10^2 \\ h^2 - 2 \cdot h \cdot r + r^2 &= r^2 + 10^2 && | -r^2 \\ h^2 - 2 \cdot h \cdot r &= 10^2 \\ \sqrt{300}^2 - 2 \cdot \sqrt{300} \cdot r &= 100 \\ 300 - 2 \cdot \sqrt{300} \cdot r &= 100 && | +2 \cdot \sqrt{300} \cdot r \\ 200 &= 2 \cdot \sqrt{300} \cdot r && | -100 \\ 100 &= \sqrt{300} \cdot r && | :2 \\ \frac{100}{\sqrt{300}} &= r && | : \sqrt{300} \\ r &\approx \underline{\underline{5,77 \text{ cm}}} \end{aligned}$$