

$$\llbracket t \rrbracket \text{Aufgabe 4.1 } \frac{h}{l} = \sin 62^\circ$$

$$h = l \cdot \sin 62^\circ$$

$$h = 30 \text{ m} \cdot \sin 62^\circ$$

$$h = \underline{26.49 \text{ m}}$$

Der Drache steigt etwa 26.5 m hoch.

$$\llbracket t \rrbracket \text{Aufgabe 4.2 } \sin \alpha = \frac{\overline{BC}}{\overline{AB}}$$

$$\alpha = \arcsin \frac{\overline{BC}}{\overline{AB}}$$

$$\alpha = \arcsin \frac{4.5 \text{ m}}{47 \text{ m}}$$

$$\alpha = \underline{5.49^\circ}$$

$$\llbracket t \rrbracket \text{Aufgabe 4.3 } \cos \beta = \frac{c/2}{b}$$

$$\beta = \arccos \frac{c}{2b}$$

$$\beta = \arccos \frac{6 \text{ cm}}{16 \text{ cm}}$$

$$\beta = \underline{67.98^\circ}$$

$$\gamma = 180^\circ - 2\beta$$

$$\gamma = \underline{44.04^\circ}$$

$$\llbracket t \rrbracket \text{Aufgabe 4.4 } \sin \alpha = \frac{h_a}{a}$$

$$h_a = a \cdot \sin \alpha$$

$$A = a \cdot h_a = a \cdot a \cdot \sin \alpha = a^2 \sin \alpha$$

$$A = (9 \text{ cm})^2 \cdot \sin 55^\circ$$

$$A = \underline{66.35 \text{ cm}^2}$$

$$\llbracket t \rrbracket \text{Aufgabe 4.6 } \sin(\gamma/2) = \frac{c/2}{b}$$

$$b \cdot \sin(\gamma/2) = c/2$$

$$b = \frac{c/2}{\sin(\gamma/2)}$$

$$b = \frac{3.2 \text{ cm}}{\sin 23^\circ}$$

$$b = \underline{8.19 \text{ cm}}$$

$$\llbracket t \rrbracket \text{Aufgabe 4.7 } a = 13 \text{ cm}, b = 4 \text{ cm}, c = 15 \text{ cm}$$

$$s = (a + b + c)/2 = 16 \text{ cm}$$

$$A = \sqrt{s(s-a)(s-b)(s-c)} = 24.0 \text{ cm}$$

$$A = \frac{c \cdot h_c}{2} \Leftrightarrow h_c = \frac{2 \cdot A}{c} = 3.2 \text{ cm}$$

$$\sin \alpha = \frac{h_c}{b}$$

$$\alpha = \arcsin \frac{h_c}{b}$$

$$\alpha = \underline{53.13^\circ}$$

$$\sin \beta = \frac{h_c}{a}$$

$$\beta = \arcsin \frac{h_c}{a}$$

$$\beta = \underline{14.25^\circ}$$

$$\gamma = 180^\circ - \alpha - \beta \Rightarrow \gamma = \underline{112.62^\circ}$$