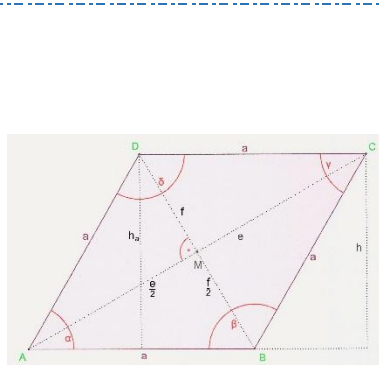


Trigonometrie – Berechnungen in Rauten

Arbeitsblatt

Berechnen Sie in folgenden Beispielen die gesuchten Größen!



Raute ABCD: $a = 70 \text{ m}$, $e = 126,883 \text{ m}$;

Zu berechnen sind: f , $\alpha = \gamma$, $\beta = \delta$, h , U und A !

$$\left(\frac{f}{2}\right)^2 = a^2 - \left(\frac{e}{2}\right)^2$$

$$\left(\frac{f}{2}\right)^2 = 70^2 - 63,4415^2$$

$$\frac{f}{2} = \sqrt{875,2395}$$

$$\frac{f}{2} = 29,584$$

$$\underline{f = 59,168 \text{ m}}$$

$$\sin \frac{\alpha}{2} = \frac{f}{2} : a$$

$$\sin \frac{\alpha}{2} = \frac{29,584}{70}$$

$$\sin \frac{\alpha}{2} = 0,4226\dots$$

$$\frac{\alpha}{2} = 25^\circ$$

$$\underline{\alpha = 50^\circ = \gamma}$$

$$\beta = 180^\circ - \alpha$$

$$\beta = 180^\circ - 50^\circ;$$

$$\underline{\beta = 130^\circ = \delta}$$

$$\sin \alpha = \frac{h}{a}$$

$$h = a \cdot \sin \alpha$$

$$h = 70 \cdot \sin 50^\circ$$

$$h = 70 \cdot 0,7660\dots$$

$$\underline{h = 53,62 \text{ m}}$$

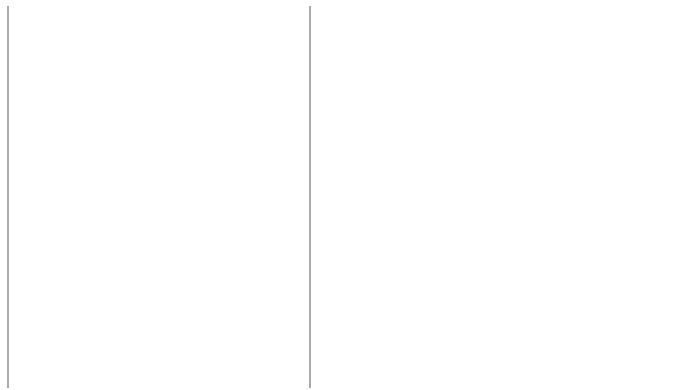
$$U = 4 \cdot a \rightarrow 4 \cdot 70$$

$$\underline{U = 280 \text{ m}}$$

$$A = a \cdot h \rightarrow 70 \cdot 53,62$$

$$\underline{A = 3753,67 \text{ m}^2}$$

Raute ABCD: $e = 140 \text{ dm}$, $h = 90 \text{ dm}$; zu berechnen sind: α , β , a , U , A und f !



Raute ABCD: $a = \gamma = 90 \text{ cm}$, $\alpha = 42^\circ$; zu berechnen sind: e , f , A , U , h und $\beta = \delta$!

