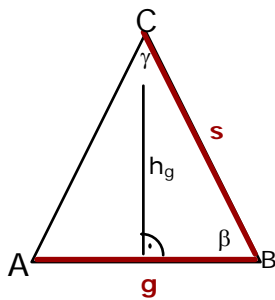


Berechnen Sie die fehlenden Seiten und Winkel der folgenden gleichschenkligen Dreiecke:

- a) $s = 25, \quad g = 14$
- b) $s = 9.3, \quad \beta = 70^\circ$
- c) $s = 40.3, \quad h_s = 11.5$
- d) $h_g = 57.1, \quad \gamma = 57.2^\circ$
- e) $h_s = 34.2, \quad \gamma = 51^\circ$

Die folgenden Aufgaben lassen sich auf verschiedene Arten lösen. Alle Resultate sind gerundet. Ich habe aber für weitere Rechnungen die exakten Werte benutzt, was kleine Abweichungen im Resultat erklären mag.

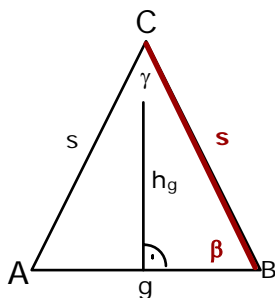
- a) $s = 25, \quad g = 14$



$$\cos \alpha = \frac{g/2}{s} \Rightarrow \alpha = 73.74^\circ$$

$$\gamma = 180^\circ - \alpha - \beta = 32.52^\circ$$

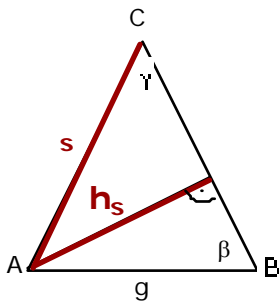
- b) $s = 9.3, \quad \beta = 70^\circ$



$$\cos \beta = \frac{g/2}{s} = \frac{g}{2s} \Rightarrow g = 2s \cos \beta = 6.36$$

$$\gamma = 180^\circ - 2\beta = 32.52^\circ$$

c) $s = 40.3, h_s = 11.5$

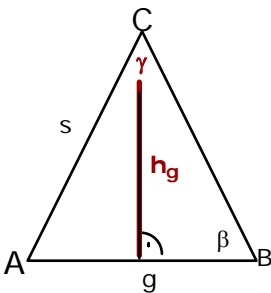


$$\sin \gamma = \frac{h_s}{s} \Rightarrow \gamma = 16.58^\circ$$

$$\beta = \alpha = \frac{180^\circ - \gamma}{2} = 81.71^\circ$$

$$\sin \beta = \frac{h_s}{g} \Rightarrow g = \frac{h_s}{\sin \beta} = 11.62$$

d) $h_g = 57.1, \gamma = 57.2^\circ$

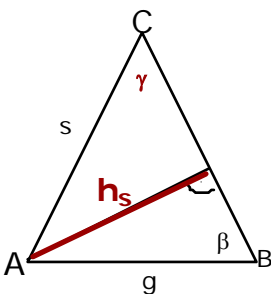


$$\beta = \alpha = \frac{180^\circ - \gamma}{2} = 61.4^\circ$$

$$\sin \beta = \frac{h_g}{s} \Rightarrow s = \frac{h_g}{\sin \alpha} = 65.04^\circ$$

$$\cos \beta = \frac{g/2}{s} = \frac{g}{2s} \Rightarrow g = 2s \cos \alpha = 62.26^\circ$$

e) $h_s = 34.2, \gamma = 51^\circ$



$$\beta = \alpha = \frac{180^\circ - \gamma}{2} = 64.5$$

$$\sin \gamma = \frac{h_s}{s} \Rightarrow s = \frac{h_s}{\sin \gamma} = 44.01$$

$$\sin \beta = \frac{h_s}{g} \Rightarrow g = \frac{h_s}{\sin \beta} = 37.89^\circ$$