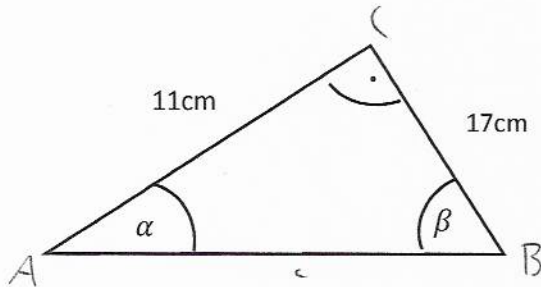


1) Berechne die fehlenden Größen des Dreiecks ABC



$$\alpha = \frac{17}{11} = 1,545$$

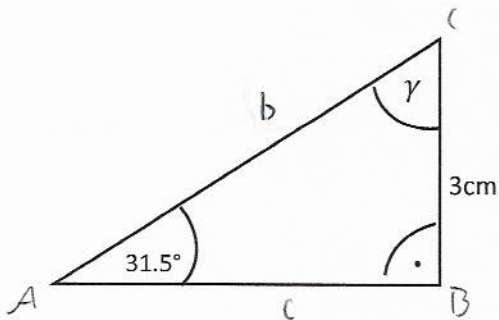
$$\tan^{-1}(1,545) = \underline{\underline{57,1^\circ}}$$

$$\beta = \frac{11}{17} = 0,647\dots$$

$$\tan^{-1}(0,647\dots) = \underline{\underline{32,9^\circ}}$$

$$c = \sqrt{11^2 + 17^2} = \underline{\underline{20,25 \text{ cm}}}$$

2) Berechne die fehlenden Größen des Dreiecks ABC



$$b = \frac{a}{\sin(\alpha)} = \frac{3}{\sin(\alpha)} \quad | \cdot b$$

$$\sin(\alpha) \cdot b = a \quad | : \sin(\alpha)$$

$$b = \frac{a}{\sin(\alpha)} = \underline{\underline{5,74 \text{ cm}}}$$

$$\gamma = \cos^{-1}\left(\frac{3}{5,74}\right) = 0,523\dots$$

$$\cos^{-1}(0,523\dots) = \underline{\underline{58,5^\circ}}$$

$$c = \sqrt{5,74^2 - 3^2} = \underline{\underline{4,9 \text{ cm}}}$$

3) Drücke mithilfe von Kosinus aus

$$\sin(44.3^\circ) \quad \sin(90^\circ - 44.3^\circ) = \underline{\underline{\sin(45.7^\circ)}} = \cos(44.3^\circ)$$

4) Drücke mithilfe von Sinus aus

a) $\cos(89^\circ) \quad \cos(90^\circ - 89^\circ) = \underline{\underline{\cos(1^\circ)}} = \sin(89^\circ)$

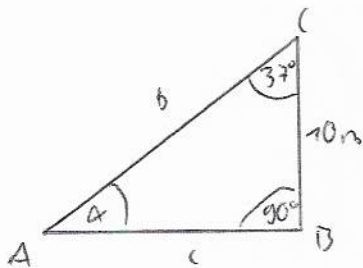
b) $\tan(30^\circ) \quad \underline{\underline{\tan(30^\circ) \cdot \cos(30^\circ)}} = \sin(30^\circ)$

$$\tan(\alpha) = \frac{\sin(\alpha)}{\cos(\alpha)} \quad | \cdot \cos(\alpha)$$

$$\tan(\alpha) \cdot \cos(\alpha) = \sin(\alpha)$$

5) Berechne aus den gegebenen Größen des rechtwinkligen Dreiecks ABC die Übrigen

a) $\gamma = 37^\circ; \beta = 90^\circ; a = 10\text{m}$



$$\alpha = 180^\circ - 37^\circ - 90^\circ = \underline{\underline{53^\circ}}$$

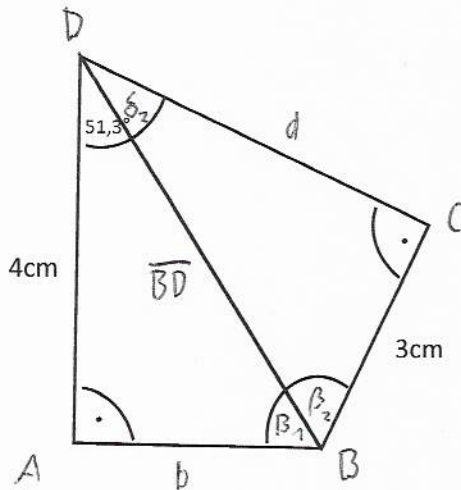
$$b = \left[\sin(\alpha) = \frac{a}{b} \quad | \cdot b \right. \\ \left. \sin(\alpha) \cdot b = a \quad | : \sin(\alpha) \right]$$

$$b = \frac{a}{\sin(\alpha)} = \underline{\underline{12,52\text{m}}}$$

~~...~~

$$c = \sqrt{12,52^2 - 10^2} = \underline{\underline{7,54\text{m}}}$$

6) Berechne aus den gegebenen Größen des Vierecks ABCD die Übrigen



$$\beta_1 = 180^\circ - 51,3^\circ - 90^\circ = \underline{\underline{38,7^\circ}}$$

$$b = \tan(\beta_1) = \frac{a}{b} \cdot b$$

$$\tan(\beta_1) \cdot b = a \quad | : \tan(\beta_1)$$

$$b = \frac{a}{\tan(\beta_1)} = 4,99 \text{ cm} = \underline{\underline{5 \text{ cm}}}$$

$$\overline{BD} = \sqrt{4^2 + 4,99^2} = 6,398 \text{ cm}$$

$$d = \sqrt{\overline{BD}^2 - 3^2} = \underline{\underline{5,65 \text{ cm}}}$$

$$\beta_2 = \frac{5,65}{3} = 1,884\dots$$

$$\tan^{-1}(1,884\dots) = \underline{\underline{62,04^\circ}}$$

$$\beta_2 = 180^\circ - 62,04^\circ - 90^\circ = \underline{\underline{27,9^\circ}}$$

$$\alpha = 90^\circ$$

$$\beta = 100,7^\circ$$

$$\gamma = 90^\circ$$

$$\delta = 79,3^\circ$$

$$a = 4 \text{ cm}$$

$$b = 5 \text{ cm}$$

$$c = 3 \text{ cm}$$

$$d = 5,65 \text{ cm}$$