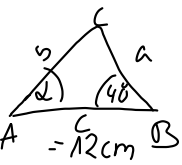


Berichtigung Nr. 3



$$\alpha = 180^\circ - 30^\circ - 40^\circ = \underline{\underline{50^\circ}}$$

geg: $\beta = 40^\circ$ $c = 12 = \text{HYP}$

ges: $b = \text{GK}$

$$\sin 40^\circ = \frac{b}{12} \quad | \cdot 12$$

$$b = 7,71 \text{ cm}$$

geg: $a = \text{AK}$

$$\cos 40^\circ = \frac{a}{12} \quad | \cdot 12 \quad a = 9,19 \text{ cm}$$

b) geg: $a = 2,8 = \text{AK}$ $c = 4,3 = \text{GK}$ $\beta = 90^\circ$

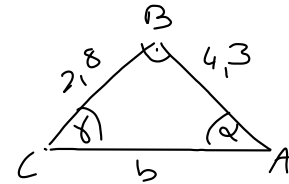
ges: γ

$$\tan \gamma = \frac{4,3}{2,8} \quad | \tan^{-1}$$

$$\gamma = 56,93^\circ$$

$$b = \sqrt{2,8^2 + 4,3^2}$$

$$b = 5,13 \text{ cm}$$

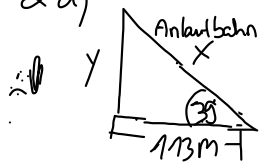


ges: $\alpha =$

$$\tan \alpha = \frac{2,8}{4,3} \quad | \tan^{-1}$$

$$\alpha = 33,07^\circ$$

2 a)



geg: $\alpha = 39^\circ$
 $\text{AK} = 113 \text{ m}$

ges: $\text{HYP} = x$

$$\cos 39^\circ = \frac{113}{x} \quad | \cdot x$$

$$\cos 39^\circ \cdot x = 113 \quad | : \cos 39^\circ$$

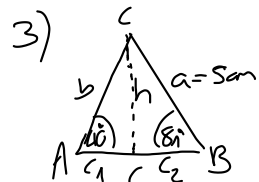
$$x = 145,4 \text{ m}$$

b) ges: $y = \text{GK}$

$$\tan 39^\circ = \frac{y}{113} \quad | \cdot 113$$

$$y = 91,51 \text{ m}$$

c) Gefälle in % = $\frac{91,51}{113} = 981 = 81\%$



geg: $\alpha = 81^\circ$
 $\text{HYP} = 5$

ges: $h = \text{GK}$

$$\sin 81^\circ = \frac{h}{5} \quad | \cdot 5$$

$$h = 4,94 \text{ m}$$

geg: $c_2 = \text{AK}$

$$\cos 81^\circ = \frac{c_2}{5} \quad | \cdot 5$$

$$c_2 = 0,78 \text{ cm}$$

geg: $\beta = 40^\circ$

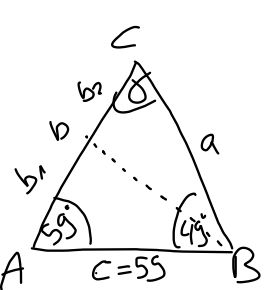
$$h = 4,94 = \text{GK}$$

geg: $c_1 = \text{AK}$

$$\tan 40^\circ = \frac{4,94}{c_1} \quad | \cdot c_1 \quad | : \tan 40^\circ$$

$$c_1 = 5,89 \text{ cm}$$

$$c_1 + c_2 = \underline{\underline{6,67 \text{ cm}}}$$



geg: $\alpha = 59^\circ$ ges: $h = Gk$
 HYP = 59

$$\sin 59^\circ = \frac{h}{59} \quad | \cdot 59$$

$$h = 50,57 \text{ km}$$

ges: $b_1 = Ak$
 $\cos 59^\circ = \frac{b_1}{59} \quad | \cdot 59$

$$b_1 = 30,39 \text{ km}$$

$$\gamma = 180^\circ - 59^\circ - 49^\circ$$

$$\gamma = 72^\circ$$

geg: $\gamma = 72^\circ$ $h = 50,57 = Gk$ ges: $b_2 = Ak$

$$\tan 72^\circ = \frac{50,57}{b_2} \quad | \cdot b_2 \quad | : \tan 72^\circ$$

$$b_2 = 16,43 \text{ km}$$

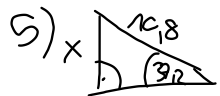
$$b_1 + b_2 =$$

$$b = 46,82 \text{ km}$$

ges: $a = \text{HYP}$

$$\sin 72^\circ = \frac{50,57}{a} \quad | \cdot a \quad | : \sin 72^\circ$$

$$a = 53,17 \text{ km}$$



geg: $x = Gk$ geg: $\alpha = 37,2^\circ$ HYP = 10,8

$$\sin 37,2^\circ = \frac{x}{10,8} \quad | \cdot 10,8$$

$$x = 6,53$$

$$h_{\text{gesamt}} = 41,8 + 6,53 = 48,33 \text{ m}$$

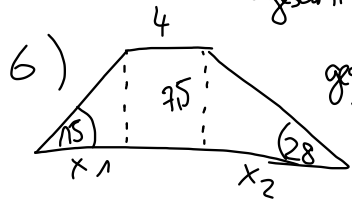
$$a = \sqrt{41,8^2 + 24^2}$$

$$a = 48,2$$

?



$$a_{\text{gesamt}} = 48,2 + 10,8 = 59 \text{ m}$$



geg: $\alpha = 15^\circ$ $Gk = 7,5$

ges: $x_1 = Ak$

$$\tan 15^\circ = \frac{7,5}{x_1}$$

$$| \cdot x_1 \quad | : \tan 15^\circ$$

$$x_1 = 27,99 \text{ m}$$

geg: $\beta = 28^\circ$ $Gk = 7,5$

ges: $x_2 = Ak$

$$\tan 28^\circ = \frac{7,5}{x_2} \quad | \cdot x_2 \quad | : \tan 28^\circ$$

$$x_2 = 14,1 \text{ m}$$

$$x_1 + 4 + x_2 = 46,1 \text{ m}$$

$$A = \frac{a+c}{2} \cdot h = \frac{46,1+4}{2} \cdot 7,5 = 187,88 \text{ m}^2$$

$$V = 187,88 \cdot 50 = 9393,73 \text{ m}^3$$