

Buch S. 63 Nr. 14

a) geg.:  $\alpha = 24,5^\circ$ ;  $\gamma = 90^\circ$ ;  
 $\delta = 180^\circ - 90^\circ - 24,5^\circ = 65,5^\circ$ ;  
 $s = 30\text{m}$  (Gegenkathete)

ges.:  $a$  (Ankathete)

R:  $\tan(\alpha) = \frac{\text{Gegenkathete von } \alpha}{\text{Ankathete von } \alpha}$

$$\tan(24,5^\circ) = \frac{30\text{m}}{a}$$

$$a = \frac{30\text{m}}{\tan(24,5^\circ)} \approx \underline{\underline{65,83\text{m}}}$$

b) geg.:  $\beta = 64^\circ$   
 $\varepsilon = 18^\circ$

ges.:  $\overline{AB}$

R:  $\tan(\beta)$

$$\tan(64^\circ)$$

$$s = \tan(\beta)$$

$$134,97$$

b) geg:  $\beta = 64^\circ$ ;  $\gamma = 90^\circ$ ; a (bzw. b) = 65,83m;

$$\varepsilon = 180^\circ - 90^\circ - 64^\circ = 26^\circ$$

ges.:  $\overline{AB}$

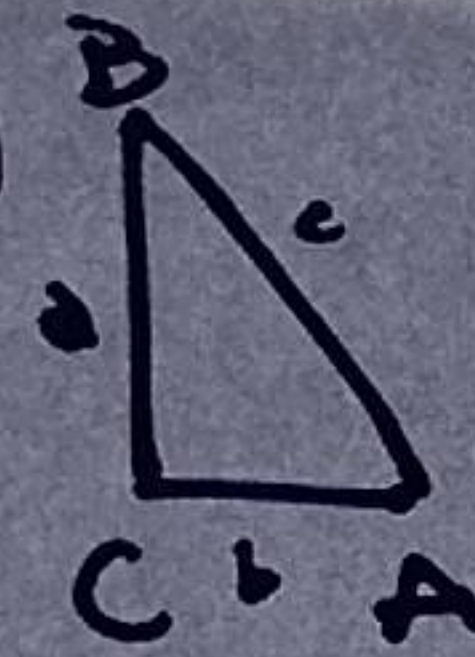
$$R: \tan(\beta) = \frac{\text{Gegenkathete von } \beta}{\text{Ankathete von } \beta}$$

$$\tan(64^\circ) = \frac{s}{65,83\text{m}}$$

$$s = \tan(64^\circ) \cdot 65,83\text{m} \approx 134,97\text{m}$$

$$134,97\text{m} - 30\text{m} = \underline{\underline{104,97\text{m}}}$$

③



$$b = 3,2 \text{ cm} \quad \alpha = 32^\circ$$

$$\cos(\alpha) = \frac{b}{c} \quad | \cdot c$$

$$c \cdot \cos(\alpha) = b \quad | : \cos(\alpha)$$

$$c = \frac{b}{\cos(\alpha)}$$

$$c = 3,2 \text{ cm} : \cos(\alpha) = 3,2 \text{ cm} : \cos(32^\circ) = \underline{\underline{3,77 \text{ cm}}}$$

$$a = \tan(\alpha) \cdot b = \tan(32^\circ) \cdot 3,2 \text{ cm} \approx \underline{\underline{2,0 \text{ cm}}}$$

$$\sin(\beta) = \frac{a}{c} = \frac{b}{c} = 0,85 \quad 0,85 \hat{=} \underline{\underline{58,2^\circ}}$$

Buch S.68 Nr. 3b

$$b) c = 7,5 \text{ cm}; \beta = 12^\circ; \gamma = 90^\circ; \alpha = 90^\circ - 12^\circ = \underline{\underline{78^\circ}}$$

c = Hypotenuse

$$\sin(78^\circ) = \frac{a}{7,5 \text{ cm}}$$

$$a = \sin(78^\circ) \cdot 7,5 \text{ cm} \approx \underline{\underline{7,34 \text{ cm}}}$$

~~$\cos(\alpha) =$~~

$$\cos(78^\circ) = \frac{b}{7,5 \text{ cm}}$$

$$b = \cos(78^\circ) \cdot 7,5 \text{ cm} \approx \underline{\underline{1,56 \text{ cm}}}$$

c) a)

$$a =$$

$$\sin$$

$$c =$$

$$\tan$$

$$\tan$$

$$b =$$

$$c) \quad a) = 1,8 \text{ cm}; \quad \alpha = 15,2^\circ; \quad \gamma = 90^\circ; \quad \beta = 90^\circ - 15,2^\circ = 74,8^\circ$$

$a =$  Gegenkathete von  $\alpha$

$$\sin(15,2^\circ) = \frac{1,8 \text{ cm}}{c}$$

$$c = \frac{1,8 \text{ cm}}{\sin(15,2^\circ)} \approx 6,87 \text{ cm}$$

$\tan(\alpha) = \frac{\text{Gegenkathete von } \alpha}{\text{Ankathete von } \alpha}$

$$\tan(15,2^\circ) = \frac{1,8 \text{ cm}}{b}$$

$$b = \frac{1,8 \text{ cm}}{\tan(15,2^\circ)} \approx 6,63 \text{ cm}$$

S.68 Nr.9

S. 68 Nr. 2

$$b) \tan(\alpha) = \frac{3\text{cm}}{4\text{cm}}$$

$$\tan(\alpha) = 0,75\text{cm}$$

$$\tan^{-1}(0,75) = 36,87^\circ$$

$$c) \tan(\alpha) = \frac{3\text{cm}}{1,8\text{cm}}$$

$$\tan(\alpha) = 1,67\text{cm}$$

$$\tan^{-1}(1,67\text{cm}) = 59,09^\circ$$

$$\sin(\beta) = \frac{3\text{cm}}{a} \quad | \cdot a$$

$$\sin(\beta) \cdot a = 3\text{cm} \quad | : \sin$$

$$a = \frac{3\text{cm}}{\sin(59,09^\circ)}$$

$$\alpha = 3,5\text{cm}$$

$$\alpha = 90^\circ + 59,09^\circ = 149,09^\circ$$

$$180^\circ - 149,09^\circ = 30,91^\circ$$

$$\tan(\alpha) = \frac{3\text{cm}}{q} \quad | \cdot q$$

$$\tan(\alpha) \cdot q = 3\text{cm} \quad | : \tan$$

$$q = \frac{3\text{cm}}{\tan(30,91^\circ)}$$

$$q = 5,01\text{cm}$$

$$q + p = 5,01 + 1,8 = 6,81$$

AB Nr. 3

$$a) \frac{11 \cdot 3 \cdot 24 \cdot 8}{47 \cdot 8 \cdot 44 \cdot 6} = \frac{1 \cdot 1 \cdot 1 \cdot 1}{1 \cdot 1 \cdot 1 \cdot 1} = 1$$

$$b) \frac{13 \cdot 169 \cdot 45 \cdot 109 \cdot 171}{109 \cdot 17 \cdot 45 \cdot 25} = \frac{13 \cdot 1 \cdot 1 \cdot 1}{1 \cdot 1 \cdot 1 \cdot 15} = \frac{13}{15}$$

$$c) \frac{63}{144} - \frac{17 \cdot 12}{36 \cdot 24} = \frac{63}{144} - \frac{1^{16}}{9 \cdot 144} = \frac{47}{144}$$

$$d) \frac{1 \cdot 2}{7 \cdot 3} + \frac{6 \cdot 2}{7 \cdot 3} = \frac{2}{21} + \frac{12}{21} = \frac{14}{21} = \frac{2}{3}$$

$$e) \frac{27}{39} \cdot 18 + \frac{51}{39} \cdot 18 = 18 \cdot \left( \frac{27}{39} + \frac{51}{39} \right) = 18 \cdot 2 = 36$$

$$f) \frac{7 \cdot 17 \cdot 3 \cdot 5}{3 \cdot 5 \cdot 1 \cdot 1} = \frac{7 \cdot 17 \cdot 1 \cdot 1}{1 \cdot 1 \cdot 1 \cdot 1} = 119$$

AB Nr. 2

$$a) \frac{{}^1_1 3 \cdot {}^2_1 4 \cdot {}^2_2 4 \cdot {}^1_1 5}{{}^1_1 7 \cdot {}^1_1 8 \cdot {}^2_7 8 \cdot {}^1_1 8} = \frac{1 \cdot 2 \cdot 2 \cdot 1}{1 \cdot 1 \cdot 7 \cdot 1} = \frac{4}{7}$$

$$b) \frac{{}^2_3 8 \cdot {}^1_8 2 \cdot {}^1_3 3}{8 \cdot 7 \cdot 5 \cdot 4} = \frac{2 \cdot 1 \cdot 2 \cdot 1}{3 \cdot 7 \cdot 1 \cdot 1} = \frac{4}{21}$$

$$c) \frac{{}^1_{19} 7 \cdot {}^1_7 8^3}{{}^2_4 8 \cdot 1 \cdot 19} = \frac{1 \cdot 7 \cdot 1 \cdot 3}{1 \cdot 4 \cdot 1 \cdot 1} = \frac{21}{4} = 5\frac{1}{4}$$

$$d) \frac{{}^2_{3 \cdot 5} 2 \cdot {}^1_{11} 4 \cdot {}^2_9 2}{3 \cdot 5 \cdot 11 \cdot 9} = \frac{2 \cdot 1 \cdot 2 \cdot 2}{1 \cdot 1 \cdot 1 \cdot 9} = \frac{8}{9}$$



S. 188 Nr. 1

$$a) \gamma = 180 - (120 + 46) = \underline{\underline{14^\circ}}$$

$$b = \frac{2,7 \text{ cm} \cdot \sin(46)}{\sin(120)} \approx \underline{\underline{2,24 \text{ cm}}}$$

$$c = \frac{2,24 \cdot \sin(14)}{\sin(46)} \approx \underline{\underline{0,175 \text{ cm}}}$$

$$b) \sin(\gamma) = \frac{3,1 \text{ cm} \cdot \sin(101)}{7,9 \text{ cm}} = 0,39 \approx \underline{\underline{22,95^\circ}}$$

$$\alpha = 180 - (101 + 230) = \underline{\underline{56^\circ}}$$

$$a = \frac{7,9 \text{ cm} \cdot \sin(56)}{\sin(101)} = \underline{\underline{6,7 \text{ cm}}}$$

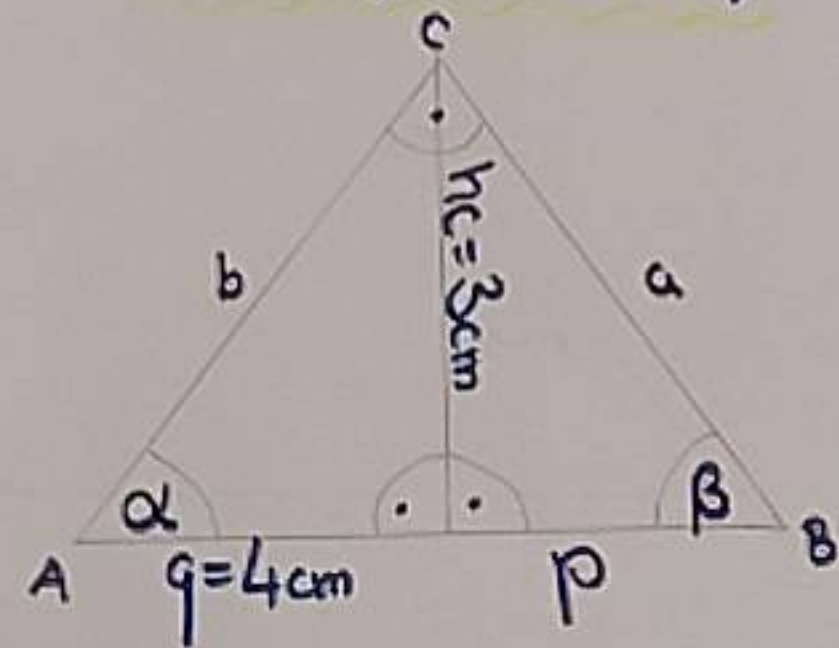
$$c) \frac{\sin(\alpha)}{a = 7,2 \text{ cm}} = \frac{\sin(30)}{3,6 \text{ cm}}$$

$$\sin(\alpha) = \frac{7,2 \text{ cm} \cdot \sin(30)}{3,6 \text{ cm}} = 1 = \underline{\underline{90^\circ}}$$

$$\beta = 180 - (30 + 90) = \underline{\underline{60^\circ}}$$

$$b = \frac{\alpha \cdot \sin(\beta)}{\sin(\alpha)} = \frac{7,2 \text{ cm} \cdot \sin(60)}{\sin(90)} = \underline{\underline{6,2 \text{ cm}}}$$

S. 68, Nr. 2 b)



Winkel:

$$\tan(\alpha) = \frac{h_c}{q} = \frac{3\text{ cm}}{4\text{ cm}} = 0,75$$

$$\tan^{-1}(0,75) = \underline{\underline{36,87^\circ}}$$

$$\beta = 180^\circ - 90^\circ - 36,87^\circ = \underline{\underline{53,13^\circ}}$$

Hypotenuse:

$$\tan(\beta) = \frac{h_c}{p}$$

$$\tan(53,13^\circ) = \frac{3\text{ cm}}{p}$$

$$p = \frac{3\text{ cm}}{\tan(53,13^\circ)}$$

$$p + q = 4\text{ cm} + 2,25\text{ cm} = \underline{\underline{6,25\text{ cm}}}$$

von: Chiara, Eric, Yannick

sollte eine Verfassung werden,  
ist aber nur eine Richtlinie geworden

S. 63, Nr. 14

a)  $\alpha = 24,5^\circ$ ,  $\beta = 64^\circ$   
Gegenkathete von  $\alpha = 30\text{m}$

$$\tan(\alpha) = \frac{\text{Gegenkathete}}{\text{Ankathete}}$$

$$\tan(24,5^\circ) = \frac{30\text{m}}{\text{Ankathete}}$$

$$\begin{aligned}\text{Ankathete} &= \frac{30\text{m}}{\tan(24,5^\circ)} \\ &= 65,83\text{m}\end{aligned}$$

b)  $180^\circ - 64^\circ - 90^\circ = 26^\circ$   
 $\tan(\alpha) = \frac{\text{Gegenkathete}}{\text{Ankathete}}$

$$\tan(26^\circ) = \frac{65,83\text{m}}{\text{Ankathete}}$$

$$\begin{aligned}\text{Ankathete} &= \frac{65,83\text{m}}{\tan(26^\circ)} \\ &= 134,97\text{m}\end{aligned}$$

$$134,97\text{m} - 30\text{m} = 104,97\text{m}$$

S. 69

$90^\circ -$

$\tan 6$

$\tan(4,$

Ankathete

381,08

S. 69, Nr. 12

$$90^\circ - 4,8^\circ = 85,2^\circ$$

$$\tan(\alpha) = \frac{\text{Gegenkathete}}{\text{Ankathete}}$$

$$\tan(4,8^\circ) = \frac{32\text{m}}{\text{Ankathete}}$$

$$\text{Ankathete} = \frac{32\text{m}}{\tan(4,8^\circ)}$$
$$= 381,08$$

$$381,08 - 64 = 317,08$$

