

- 1 a) Ordne jedem Kärtchen die passende Seite zu.

Hypotenuse in (1)

Ankathete von α

Ankathete von β

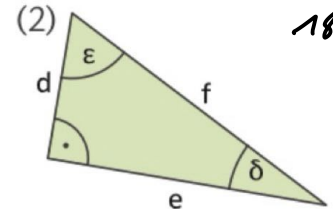
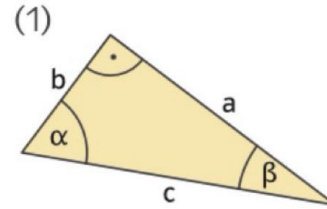
Gegenkathete von α

Gegenkathete von ϵ

Ankathete von δ

Gegenkathete von δ

Gegenkathete von β



Ankathete von ϵ

Hypotenuse in (2)

- b) Notiere wie im Beispiel auf dem Rand zu den Dreiecken aus Teilaufgabe a) die passenden Seitenverhältnisse für $\sin(\alpha)$, $\cos(\alpha)$, $\sin(\beta)$, $\cos(\beta)$ bzw. $\sin(\delta)$, $\cos(\delta)$, $\sin(\epsilon)$, $\cos(\epsilon)$.

$$\sin(\alpha) = \frac{\text{Gegenk.}}{\text{Hypot.}} = \frac{a}{c}$$

$$\cos(\alpha) = \frac{\text{Ank.}}{\text{Hypot.}} = \frac{b}{c}$$

$$\sin(\beta) = \frac{b}{c}$$

$$\cos(\beta) = \frac{a}{c}$$

$$\sin(\delta) = \frac{d}{f}$$

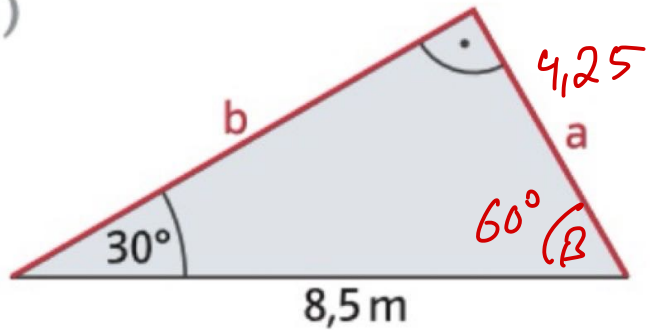
$$\cos(\delta) = \frac{e}{f}$$

$$\sin(\epsilon) = \frac{e}{f}$$

$$\cos(\epsilon) = \frac{d}{f}$$

S. 138 A1 ✓ A2 a, d A3 a, d A4 (I) A5 a

2 a)



a) $\sin(30^\circ) = \frac{a}{8,5} \quad | \cdot 8,5$

$\sin(30^\circ) \cdot 8,5 = a$

$a = 4,25 \text{ (m)}$

① $\cos(30^\circ) = \frac{b}{8,5} \quad | \cdot 8,5$

$b = \cos(30^\circ) \cdot 8,5 = 7,36 \text{ (m)}$

ODER

② Winkelsumme $\beta = 180^\circ - 30^\circ - 90^\circ = 60^\circ$

$\sin(60^\circ) = \frac{b}{8,5} \quad | \cdot 8,5$

$b = \sin(60^\circ) \cdot 8,5 = 7,36 \text{ (m)}$

ODER

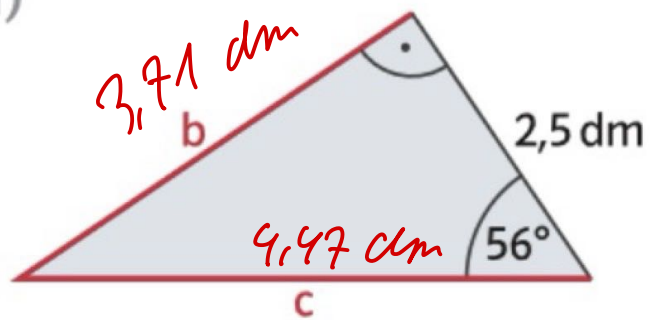
③ Satz des Pythagoras

$8,5^2 = 4,25^2 + b^2 \quad | -4,25^2$

$8,5^2 - 4,25^2 = b^2 \quad | \sqrt{\quad}$

$b = \sqrt{8,5^2 - 4,25^2} = 7,36 \text{ (m)}$

d)



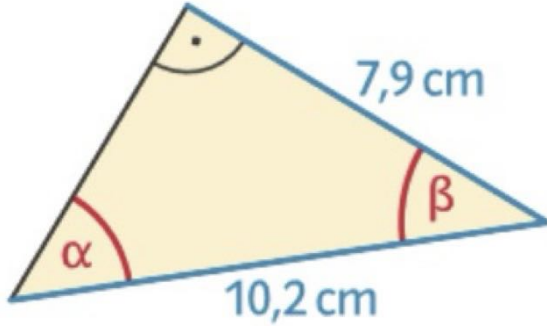
$\cos(56^\circ) = \frac{2,5}{c} \quad | \cdot c$

$c \cdot \cos(56^\circ) = 2,5 \quad | : \cos(56^\circ)$

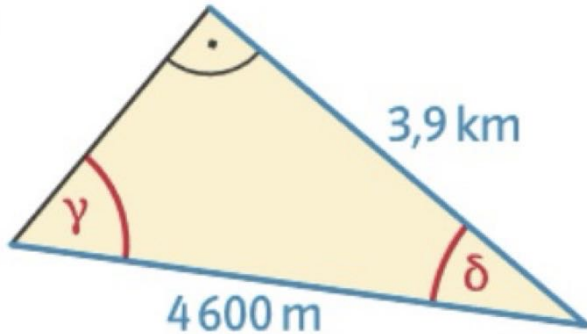
$c = 2,5 : \cos(56^\circ) = 4,47 \text{ (dm)}$

3

a)



d)



$$\sin \alpha = \frac{7,9}{10,2} \quad | \sin^{-1}$$

$$\alpha = \sin^{-1}\left(\frac{7,9}{10,2}\right) = 50,8^\circ$$

Winkelsumme

$$\beta = 180^\circ - 90^\circ - 50,8^\circ = 39,2^\circ$$

$$\delta = 32^\circ \quad \cos(\delta) = \frac{3,9}{4,6}$$

...

$$\gamma = 58^\circ$$

4 $\triangle ABC$ $\gamma = 90^\circ$

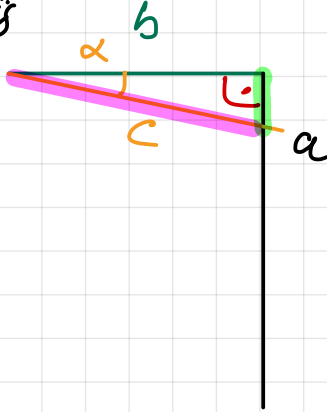
$\alpha = 14,5^\circ$

Planfigur

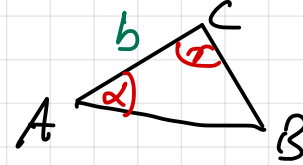
1) b beliebig

2) $\gamma = 90^\circ$

3) $\alpha = 14,5^\circ$



$$\sin(\alpha) = \frac{a}{c}$$

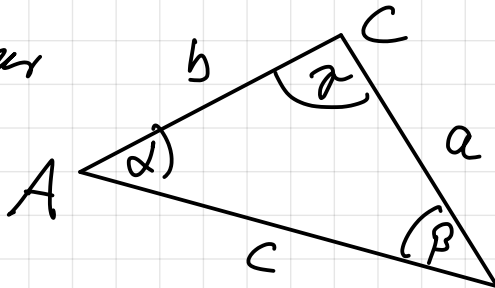


b) $\sin(14,5^\circ) = 0,25$

5

	a	b	c	α	β	γ
a)	12,7 cm	2,9 cm	13 cm	77°	13°	90°

Planfigur



Winkelsumme

$$\beta = 180^\circ - 90^\circ - 77^\circ = 13^\circ$$

$$\sin(\beta) = \frac{b}{c}$$

$$b = \sin(13^\circ) \cdot 13$$

$$\sin(13^\circ) = \frac{b}{13} \quad | \cdot 13 = 2,9$$

14. November 25. 2

Studientag

1/2 M $\rightarrow$ Aufgaben

1) Zentrische Streckung

1) rechnen

2) 3) auf Blatt

4) Schnittpunkt

2) Mäße Strahlen wie ZP 10

S. 139 Anwendungsaufgaben



1) Planfigur mathematische Skizze
mit Beschriftung

A 6 ; A 9 Rest HA für Donnerstag