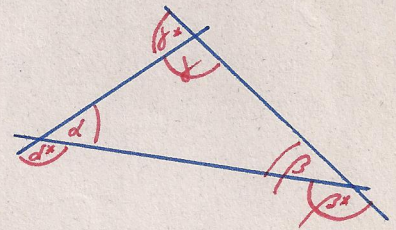


Geometrie - Aufgaben : Grundlagen 6

1) Berechne die fehlenden Innen - und Aussenwinkel eines Dreiecks, von welchem folgendes bekannt ist :

$\beta = 60^\circ, d = 80^\circ$   
 $d^* = 100^\circ, \gamma^* = 140^\circ$

- a)  $\alpha = 35^\circ, \beta = 135^\circ$   $\left\{ \begin{array}{l} \gamma = 70^\circ \\ d^* = 145^\circ, \beta^* = 45^\circ \\ \gamma^* = 170^\circ \end{array} \right.$   
 b)  $\gamma = 40^\circ, \beta^* = 120^\circ$   
 c)  $\alpha^* = 110^\circ, \gamma^* = 100^\circ$   
 $d = 70^\circ, \gamma = 80^\circ, \beta = 30^\circ, \beta^* = 150^\circ$

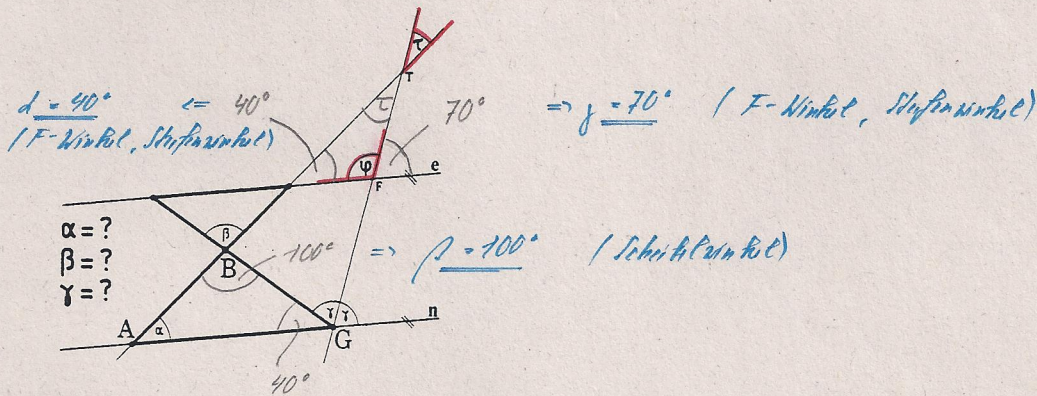


2) Ein Dreieck heisst **rechtwinklig** :  $\Leftrightarrow \gamma = 90^\circ$ .

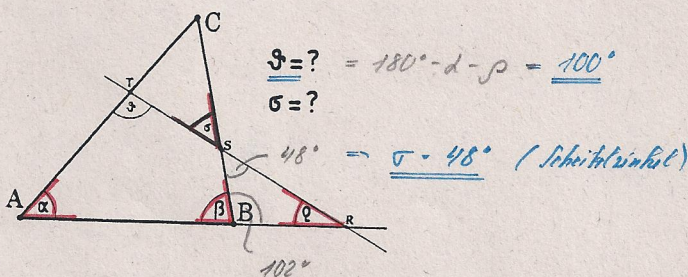
Berechne in einem rechtwinkligen Dreieck den Winkel  $\beta$ , falls

- a)  $\alpha = 53^\circ$   $\beta = 37^\circ$   
 b)  $\alpha = \beta$   $\left. \begin{array}{l} d + \beta = 90^\circ \\ d = \beta \end{array} \right\} \Rightarrow d + d = 90 \Rightarrow d = 45^\circ$   
 c)  $\alpha^* = 90^\circ$   $\Rightarrow d = 90^\circ \Rightarrow$  Winkelsumme im  $\Delta > 180^\circ$   $\Rightarrow$   $\beta + \beta = 90^\circ \Rightarrow \beta = 45^\circ$

3)  $\varphi = 110^\circ, \tau = 30^\circ, e \parallel n$ . Berechne  $\alpha, \beta$  und  $\gamma$ .

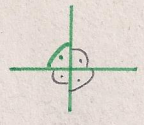


4)  $\alpha = 50^\circ, \beta = 78^\circ, \varrho = 30^\circ$ . Berechne  $\sigma$  und  $\vartheta$ .



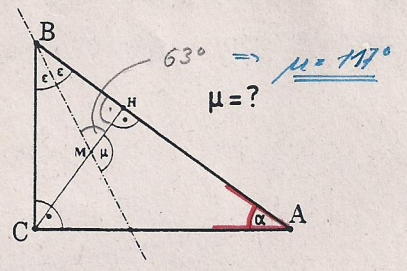


HINWEIS, alle  $\angle$  einzeichnen!



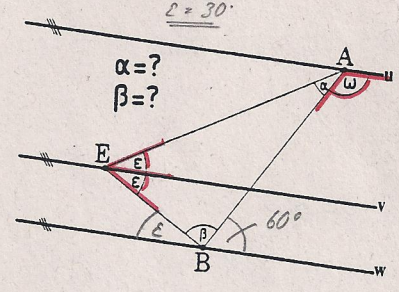
5)  $\alpha = 36^\circ$ . Berechne  $\mu$ .

$2\varepsilon = 54^\circ \Rightarrow \varepsilon = 27^\circ$



6)  $\omega = 4\varepsilon = 120^\circ$ ,  $u \parallel v \parallel w$ . Berechne  $\alpha$  und  $\beta$ .

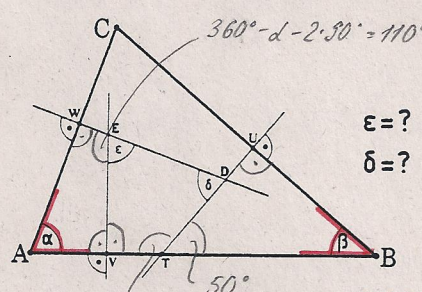
$\Rightarrow \omega = 120^\circ$   
 $\varepsilon = 30^\circ$



$\Rightarrow \beta = 90^\circ \Rightarrow \alpha = 180^\circ - \beta - 2\varepsilon = 30^\circ$

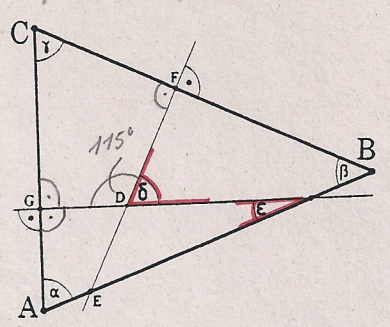
7)  $\alpha = 70^\circ$ ,  $\beta = 40^\circ$ . Berechne  $\varepsilon$  und  $\delta$ .

$360^\circ - \alpha - \beta - 2 \cdot 90^\circ = 110^\circ \Rightarrow \varepsilon = 70^\circ$



$\delta = 360^\circ - \varepsilon - 90^\circ - 130^\circ = 70^\circ$

8)  $\delta = 65^\circ$ ,  $\varepsilon = 20^\circ$ . Berechne  $\alpha$ ,  $\beta$  und  $\gamma$ .



$\alpha = 180^\circ - 90^\circ - \varepsilon = 70^\circ$   
 $\beta = 360^\circ - 2 \cdot 90^\circ - 115^\circ = 65^\circ$   
 $\Rightarrow \beta = 45^\circ$

$\alpha = ?$   
 $\beta = ?$   
 $\gamma = ?$