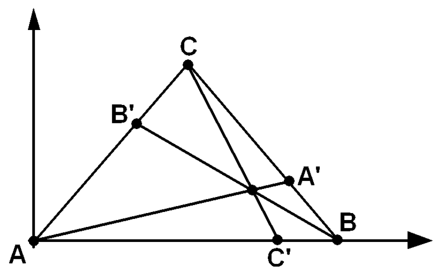
Test in AlgGeo ◇ Examen en AlgGéo ◇ Type B1 ◇ I / 2

Probl. 1

$$\vec{a} = \vec{e}_1 + \vec{e}_2 + \vec{e}_3$$
$$\vec{b} = \vec{e}_1 - \vec{e}_2$$
$$\vec{c} = \vec{e}_1 + 2\,\vec{e}_2 + 4\,\vec{e}_3$$

$\{\vec{a}, \vec{b}, \vec{c}\} \leadsto$ Basis? • *Base?*
Basiswechsel: • *Changement de base:*
$\vec{e}_1, \vec{e}_2, \vec{e}_3 = ?$

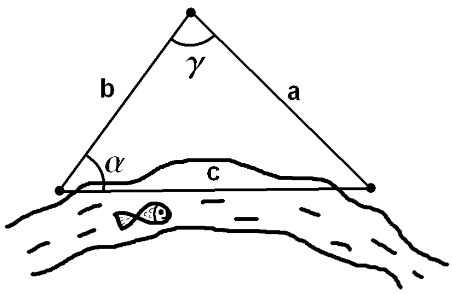
Probl. 2



Gegeben: • *Donné:*
$B = B(8/0),\ \ C = C(5/6),$
$\overrightarrow{AB'} = \dfrac{2}{3}\ \overrightarrow{AC}\ ,\quad \overrightarrow{BA'} = \dfrac{2}{5}\ \overrightarrow{BC}$

$\leadsto\ C' = ?$

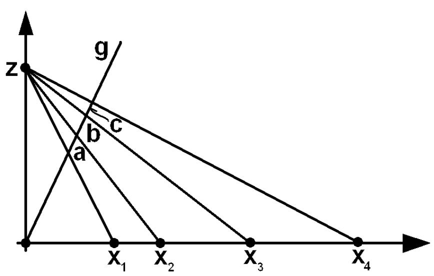
Probl. 3



Gegeben: • *Donné:*
$a = 67.54\,m,\ \ b = 59.18\,m$
$\gamma = 98^o\,12'\,14''$

$\leadsto\ c = ?,\ \ \alpha = ?$

Probl. 4

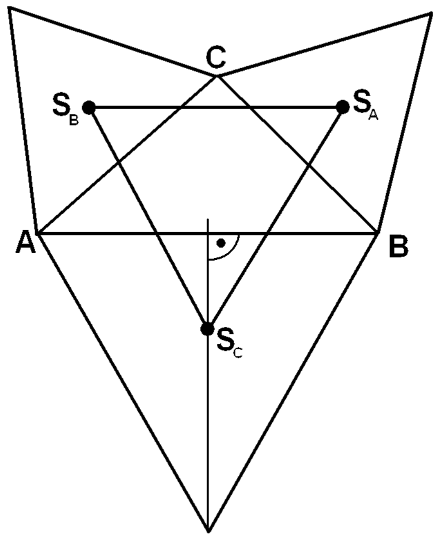


Gegeben: • *Donné:*
$Z = Z(0/12),\ \ a : b = 1$

(a) $c : b = ?$

(b) Ist es möglich, eine Gerade g so zu legen, dass $a = b = c$ gilt?
• *Est–ce que c'est possible de tracer une droite de façon qu'il vaille* $a = b = c$*?*

Probl. 5



Gegeben: • *Donné:*

$A = A(1/1),\ \ B = B(10/4)$
$C = C(5/9) \rightsquigarrow\ \ \triangle ABC$

Über $a,\ \ b,\ \ c$ werden die gleichseitigen $\triangle$ errichtet $\rightsquigarrow$ Schwerpunkte $S_A,\ \ S_B,\ \ S_C$.
• *Sur les arêtes $a,\ \ b,\ \ c$ on construit les $\triangle$ équilatérals $\rightsquigarrow$ centres de gravitation $S_A,\ \ S_B,\ \ S_C$.*

(a) Berechne • *Calculer* $S_A,\ \ S_B,\ \ S_C$!

(b) Berechne • *Calculer* $|\overline{S_AS_B}|,\ \ |\overline{S_BS_C}|,\ \ |\overline{S_CS_A}|$!