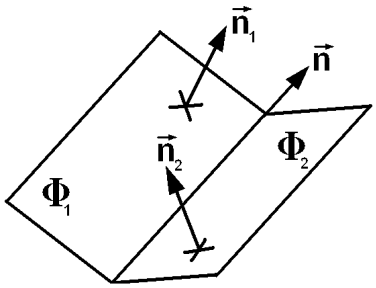
Übungen in AlgGeo ◇ Exercices en AlgGéo ◇ T. F1 ◇ I / 16

Probl. 1

$$\begin{aligned} \Phi_1 :\ 3\,x + 2\,y - 4\,z + 5 &= 0 \\ \Phi_2 :\ -2\,x + 5\,y + 8\,z - 7 &= 0 \end{aligned}$$

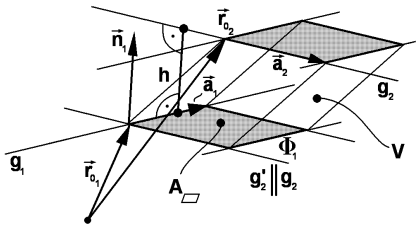
$\vec{n}_1 = ?$ $\quad \vec{n}_2 = ?$ $\quad \vec{n} = ?$



Probl. 2 $g_1 :\ \vec{r} = \vec{r}_{0_1} + t\,\vec{a}_1 = \begin{pmatrix} 2 \\ 1 \\ 5 \end{pmatrix} + t \begin{pmatrix} 3 \\ 7 \\ 6 \end{pmatrix}$

$g_2 :\ \vec{r} = \vec{r}_{0_2} + t\,\vec{a}_2 = \begin{pmatrix} -1 \\ -4 \\ 2 \end{pmatrix} + t \begin{pmatrix} -1 \\ 5 \\ 2 \end{pmatrix}$

$A = ?$ $\quad V = ?$ $\quad h = ?$



Probl. 3 $\Phi :\ \vec{r} = \begin{pmatrix} 2 \\ 1 \\ 5 \end{pmatrix} + \lambda \begin{pmatrix} 3 \\ 7 \\ 6 \end{pmatrix} + \mu \begin{pmatrix} -\,-1 \\ 5 \\ 2 \end{pmatrix}$

$\vec{n}_\Phi = ?$

$\rightsquigarrow\ A\,x + B\,y + C\,z + D = 0,\ \ A, B, C, D = ?$

Probl. 4

$$\begin{aligned} g_1 :\ 2\,x + 3\,y - 5 &= 0 \\ g_2 :\ \alpha\,x + 4\,y + 6 &= 0 \end{aligned}$$

(a) $g_1 \cap g_2 = \{\} \rightsquigarrow\ \alpha = ?$

(b) $\mathbb{L} = \{\} \rightsquigarrow\ \alpha = ?$ $\quad$ (Cramer)