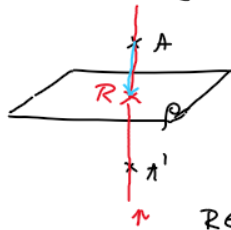


AG3D - Sbírala IX.

44/4.82 $A[3, -4, -6]$ $\rho: x - y - 4z - 13 = 0$

$A' [?, ?, ?]$ A, A' souměrné dle ρ



$\vec{n} \perp \rho \quad \vec{n} = (1, -1, -4)$
 $\rho: x = 3 + t$
 $y = -4 - t$
 $z = -6 - 4t$

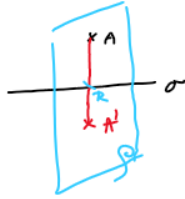
$\vec{AR} = ?$
 $A' = A + 2 \cdot \vec{AR}$

$R \in \rho \cap \rho: 3+t + 4+t + 24+16t - 13 = 0$
 $t = -1$

$R[2; -3; -2]$ $\vec{AR} = (-1, 1, 4) \Rightarrow A' [1; -2; 2]$

45/4.85 obzrác bodu $A[1, 10, -8]$ v osone'

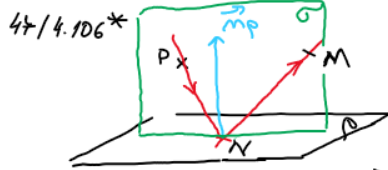
souměrnosti $\sigma: x = 1 - 2t$ $r: A \rightarrow A'$



$y = 3 + t$
 $z = -1 + 3t$
 $\vec{m} = (-2, 1, 3) = \vec{m}_\rho$
 $\rho: -2x + y + 3z + d = 0$
 $A: -2 + 10 - 24 + d = 0$
 $d = 16$

$\rho: -2x + y + 3z + 16 = 0$
 $-2 + 4t + 3 + t - 3 + 9t + 16 = 0$
 $t = -1$ $R[3; 2; -4]$

$\rho \perp \sigma$
 $A' = A + 2 \cdot \vec{AR}$
 $\vec{AR} = (2; -8; 4)$ $A' [5; -6; 0]$



$\rho: x - y - 4z - 13 = 0$

$\sigma \perp \rho$
 $P \in \sigma$
 $N \in \sigma$
 $\vec{m}_\rho \subset \sigma$
 $P[0, 0, 0]$ $\vec{PN} \subset \sigma$ $\vec{PN} = (a, b, c)$
 $M[1, -2, 2]$ $\vec{MN} \subset \sigma$ $\vec{MN} = (a-1, b+2, c-2)$
 $N[?, ?]$ $\vec{PN}: x = 0 + at$ $\vec{m}_\rho:$
 $y = 0 + bt$ $x = 1 + (a-1)t$
 $z = 0 + ct$ $y = -2 + (b+2)t$
 $z = 2 + (c-2)t$

máme 5 rovnicových: a, b, c, t, s

k jasnějšímu řešení potřebujeme 5 rovnic
 3 rovnice získáme z $\vec{PN} \perp \vec{MN}$

4. rve $\Rightarrow N \in \rho$

6. rve $\Rightarrow N \in \sigma \Rightarrow$ je třeba ještě určit OR pro σ

$\vec{PM} \subset \sigma$
 $\vec{m}_\rho \subset \sigma$
 $\vec{m}_\sigma = \vec{PM} \times \vec{m}_\rho$
 $\vec{PM} = (1, -2, 2)$
 $\vec{m}_\rho = (1, -1, -4)$
 $\vec{m}_\sigma = (10, 6, 7)$

$\sigma: 10x + 6y + z + d = 0$

$\rho: 0 + 0 + 0 + d = 0 \Rightarrow d = 0$ $\sigma: 10x + 6y + z = 0$

$N \in \rho: a - b - 4c - 13 = 0$

$N \in \sigma: 10a + 6b + c = 0$

v pořadí jsou řešení tedy soustavu 5 ric
 o 5 rovnicových:

$at = 1 + as - s$

$bt = -2 + bs + 2s$

$ct = 2 + cs - 2s$

$a - b - 4c - 13 = 0$

$10a + 6b + c = 0$

Řešení má je

na rás !!

$N \left[\frac{39}{31}; -\frac{52}{31}; -\frac{78}{31} \right]$