10.4.2

Går gjennom: $(0,2,-3)$

normal til $4\vec{i}-\vec{j}-2\vec{k}$

$$P_0 = (0,2,-3) = (x_0, y_0, z_0)$$

$$\vec{n} = 4\vec{i}-\vec{j}-2\vec{k}$$

$$A(x-x_0)+B(y-y_0)+C(z-z_0)=0$$

$$4(x-0)+(-1)(y-2)+(-2)(z-(-3))=0$$

$$4x-y+2-2z-6=0$$

$$4x-y-2z=\cancel{-8}\ 4$$

10.4.6 $(-2,0,0)$ $(0,3,0)$ $(0,0,4)$

$$\frac{x}{-2}+\frac{y}{3}+\frac{z}{4}=1 \quad \Big| \cdot 3 \cdot 4 \cdot (-1)$$

$$6x-4y-3z=-12$$

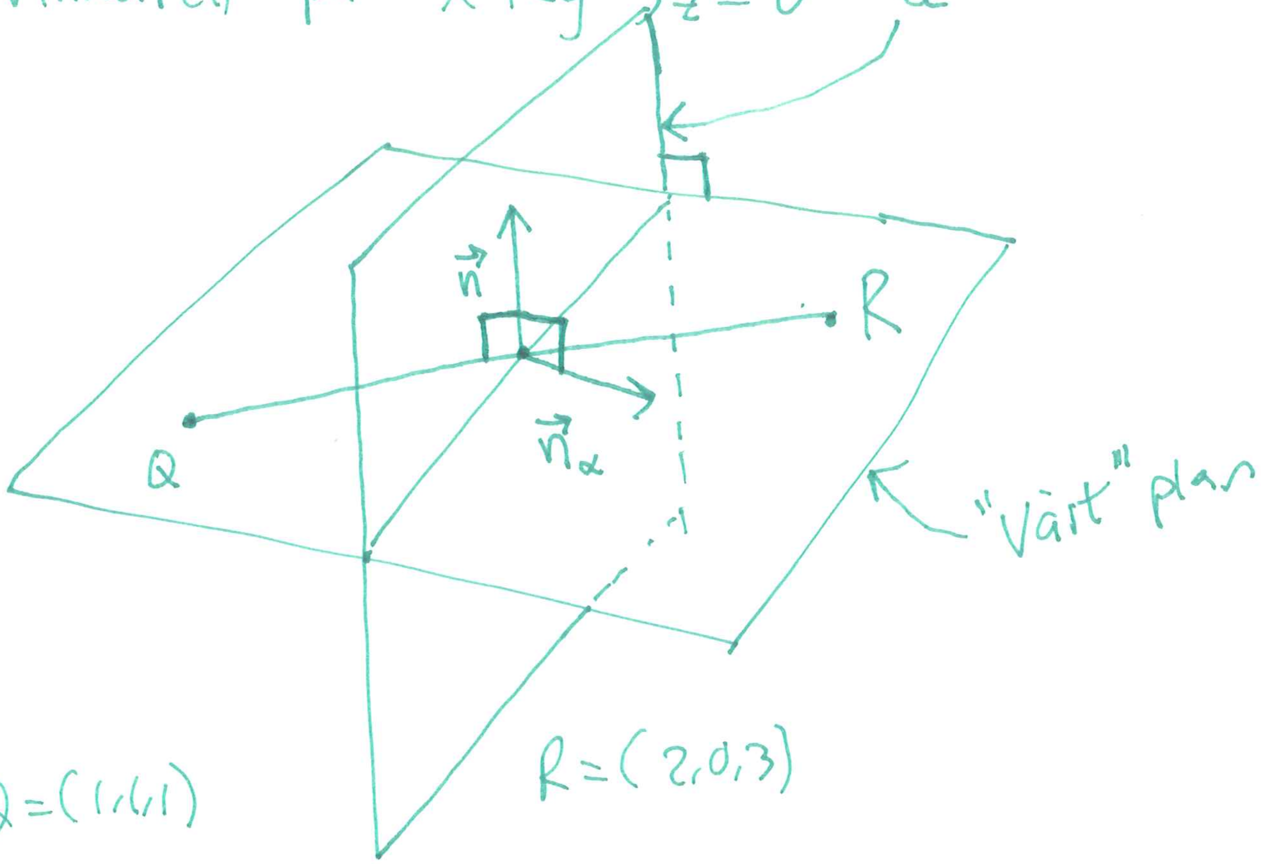
10.4.7 gjennom

Øvt 10

2

$Q=(1,1,1)$ $R=(2,0,3)$

og vinkelrett på $x+2y-3z=0$ α



$Q=(1,1,1)$

$R=(2,0,3)$

$\vec{QR}=\vec{i}-\vec{j}+2\vec{k}$ $\vec{n}_\alpha=\vec{i}+2\vec{j}-3\vec{k}$

$$\vec{n}=\vec{QR}\times\vec{n}_\alpha=\begin{bmatrix} -1 & 2 & 1 & -1 \\ 2 & -3 & 1 & 2 \end{bmatrix}$$

$$\big((-1)\cdot(-3)-2\cdot 2\big)\vec{i}+\big(2\cdot 1-1\cdot(-3)\big)\vec{j}+\big(1\cdot 2-(-1)\cdot 1\big)\vec{k}$$

$$(3-4)\vec{i}+(2+3)\vec{j}+(2+1)\vec{k}$$

$$\vec{n}=-\vec{i}+5\vec{j}+3\vec{k}$$

Фк+10

3

$\vec{n} = -\vec{i} + 5\vec{j} + 3\vec{k}$

$\vec{r}_0 = \vec{i} + \vec{j} + \vec{k}$

$$A(x - x_0) + B(y - y_0) + C(z - z_0) = 0$$

$$-1(x-1) + 5(y-1) + 3(z-1) = 0$$

$$-x + 1 + 5y - 5 + 3z - 3 = 0$$

$$-x + 5y + 3z = 7 \qquad (-1)$$

$$x - 5y - 3z = -7$$

10.4.8 Øvt 10

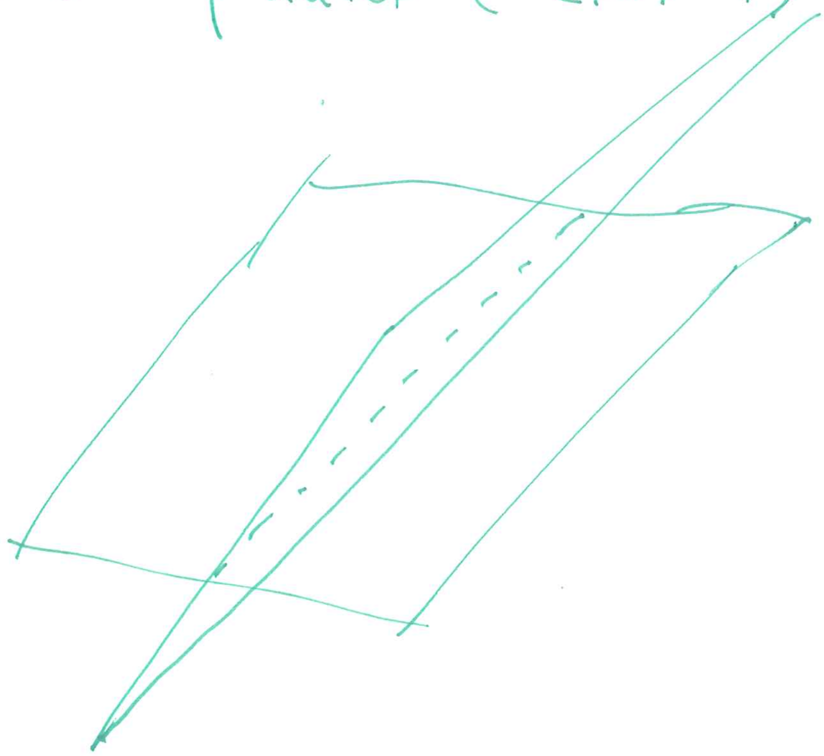
4

"vårt" plan skal: "pass through the line"

skjæringslinja mellom

$$2x+3y-z=0 \quad \text{og} \quad x-4y+2z=-5$$

og gjennom punktet $(-2,0,-1)$



Øu+ 10

5

$$(2x+3y-z)+\lambda\cdot(x-4y+2z+5)=0$$

$$2(-2)+3\cdot(0)-(-1)+\lambda(-2-4\cdot 0+2\cdot(-1)+5)=0$$

$$\lambda=3$$

$$5x-9y+5z=-15$$