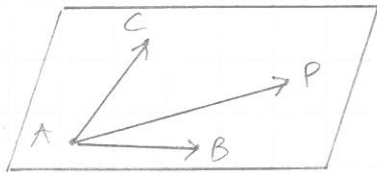


b) $x = y = 0 : -26z + 20 = 0 \Rightarrow z = \frac{20}{26} = \frac{10}{13}$
 $\Rightarrow P = (0, 0, \frac{10}{13})$

8.20

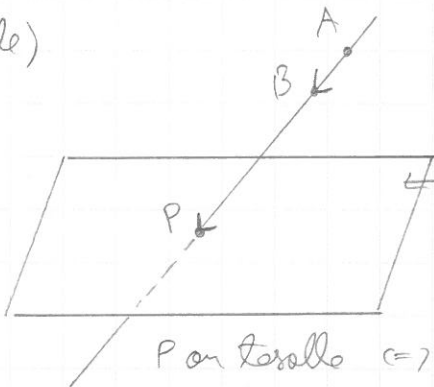


$A = (1, 0, 4), B = (4, 3, 0), C = (-1, -2, 3)$

Punkte P on koralle $\Rightarrow \vec{AP} = \lambda \vec{AB} + \mu \vec{AC}$
 $\Rightarrow \vec{AP} = \lambda (3\vec{i} + 3\vec{j} - 4\vec{k}) + \mu (-2\vec{i} - 2\vec{j} - \vec{k})$
 $= (3\lambda - 2\mu) \vec{i} + (3\lambda - 2\mu) \vec{j} + (-4\lambda - \mu) \vec{k}$
 $\Rightarrow P = (1 + 3\lambda - 2\mu, 0 + 3\lambda - 2\mu, 4 - 4\lambda - \mu)$

9. Jason leitkavrukkite

9.2 le)



$A = (-2, 0, 5), B = (10, -4, 11)$
 $x + 4y + 6z - 44 = 0$

P on normaal $\Leftrightarrow \vec{AP} \parallel \vec{AB}$
 $\Rightarrow \vec{AP} = t \vec{AB} = t(12\vec{i} - 4\vec{j} + 6\vec{k}) = 12t\vec{i} - 4t\vec{j} + 6t\vec{k}$
 $\Rightarrow P = (-2 + 12t, 0 - 4t, 5 + 6t)$

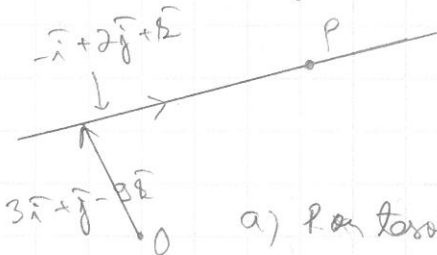
P on koralle $\Rightarrow (-2 + 12t) + 4 \cdot (0 - 4t) + 6(5 + 6t) - 44 = 0$
 $\Rightarrow 32t - 16 = 0 \Rightarrow t = \frac{1}{2}$
 $\Rightarrow P = (-2 + 12 \cdot \frac{1}{2}, 0 - 4 \cdot \frac{1}{2}, 5 + 6 \cdot \frac{1}{2}) = (4, -2, 8)$

9.6 $T_1: x - 2y + 4z + 3 = 0 \Rightarrow \vec{m}_1 = \vec{i} - 2\vec{j} + 4\vec{k}$ (normaliseeritud)
 $T_2: 7x - 2y - 4z - 35 = 0 \Rightarrow \vec{m}_2 = 7\vec{i} - 2\vec{j} - 4\vec{k}$ (— | —)

$\cos(\vec{m}_1, \vec{m}_2) = \frac{\vec{m}_1 \cdot \vec{m}_2}{|\vec{m}_1| |\vec{m}_2|} = \frac{1 \cdot 7 + (-2) \cdot (-2) + 4 \cdot (-4)}{\sqrt{1^2 + (-2)^2 + 4^2} \cdot \sqrt{7^2 + (-2)^2 + (-4)^2}} = \frac{-5}{\sqrt{21} \sqrt{69}}$

$\Rightarrow \alpha = \angle(\vec{m}_1, \vec{m}_2) = 97,548^\circ \approx 97,6^\circ$
 $\alpha > 90^\circ \Rightarrow$ korjige
 reaalne tulemus
 $\beta = 180^\circ - \alpha \approx 82,5^\circ$

9.7 $\vec{OP} = 3\vec{i} + \vec{j} - 9\vec{k} + t(-\vec{i} + 2\vec{j} + \vec{k}) \quad t \in \mathbb{R}$



$\vec{OP} = (3-t)\vec{i} + (1+2t)\vec{j} + (-9+t)\vec{k}$
 $\Rightarrow P = (\frac{3-t}{x}, \frac{1+2t}{y}, \frac{-9+t}{z})$

a) P on koralle $2x - 3y + 8z + 5 = 0$

$\Rightarrow 2(3-t) - 3(1+2t) + 8(-9+t) + 5 = 0 \Rightarrow -64 = 0 \quad \downarrow$

\Rightarrow ei leibkoe