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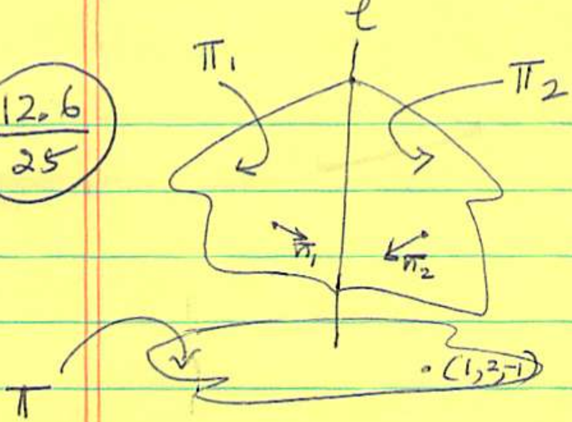

Let π_1 be the plane given by $2x+y+z=2$ and let π_2 be the plane given by $x+2y+z=3$. Let ℓ be the line of intersection of π_1 & π_2.

Then $\bar{n}_1 = \langle 2,1,1\rangle \perp \pi_1$,

$\Rightarrow \bar{n}_1 \perp \ell$, since ℓ is on π_1.

Also, $\bar{n}_2 = \langle 1,2,1\rangle \perp \pi_2$,

$\Rightarrow \bar{n}_2 \perp \ell$, since ℓ is on π_2.

Therefore, ℓ is perpendicular to both $\bar{n}_1$ & $\bar{n}_2$.

But $\bar{n}_1 \times \bar{n}_2$ is perpendicular to both $\bar{n}_1$ & $\bar{n}_2$.

$\Rightarrow \bar{n}_1 \times \bar{n}_2 \parallel \ell$.

But $\ell \perp \pi$. (given). $\therefore$ $\bar{n}_1 \times \bar{n}_2 = \bar{n}$ (say) $\perp \pi$.

$$\Rightarrow \bar{n} = \begin{vmatrix} \bar{i} & \bar{j} & \bar{k} \\ 2 & 1 & 1 \\ 1 & 2 & 1 \end{vmatrix} = \langle -1, -1, 3\rangle$$

$\therefore$ Equation of π is:

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

or $\quad x + y - 3z - 6 = 0$ //