CORREGIR DEBERES

13 b) $\begin{cases} y+z=-1 \\ x-y=1 \\ x+2y+3z=-2 \end{cases}$

$\left(\begin{array}{ccc|c} 1 & -1 & 0 & 1 \\ 1 & 2 & 3 & -2 \\ 0 & 1 & 1 & -1 \end{array}\right) \sim \left(\begin{array}{ccc|c} 1 & -1 & 0 & 1 \\ 0 & 3 & 3 & -3 \\ 0 & 1 & 1 & -1 \end{array}\right)$

$F_2 = F_2 - F_1$ $\quad F_3 = 3F_3 - F_2$

$\left(\begin{array}{ccc|c} 1 & -1 & 0 & 1 \\ 0 & 3 & 3 & -3 \\ 0 & 0 & 0 & 0 \end{array}\right)$ $\begin{cases} x-y=1 \\ y+z=-1 \end{cases}$ $\begin{array}{l} x=1+\alpha \\ y=\alpha \\ z=-1-\alpha \end{array}$

CLASIF SCI $\Rightarrow \exists$ inf sol

SOL $(x,y,z)=(1+\alpha, \alpha, -1-\alpha)$ $\forall \alpha \in \mathbb{R}$

I.6 3 planos que se cortan en una recta

oct 5-13:17

14 a) $\begin{cases} x+y+z=3 \\ x+y-z=3 \\ z=0 \end{cases}$

$\left(\begin{array}{ccc|c} 1 & 1 & 1 & 3 \\ 1 & 1 & -1 & 3 \\ 0 & 0 & 1 & 0 \end{array}\right) \sim \left(\begin{array}{ccc|c} 1 & 1 & 1 & 3 \\ 0 & 0 & -2 & 0 \\ 0 & 0 & 1 & 0 \end{array}\right)$

$F_2 = F_2 - F_1$ $\quad F_3 = 2F_3 + F_2$

$\left(\begin{array}{ccc|c} 1 & 1 & 1 & 3 \\ 0 & 0 & -2 & 0 \\ 0 & 0 & 0 & 0 \end{array}\right)$ $\begin{cases} x+y+z=3 \\ -2z=0 \end{cases}$ $\begin{array}{l} x=3-\alpha \\ y=\alpha \\ z=0 \end{array}$

CLASIF: SCI $\Rightarrow \exists$ inf sol

SOL $(x,y,z)=(3-\alpha, \alpha, 0)$ $\forall \alpha \in \mathbb{R}$

$(\alpha, 3-\alpha, 0)$

I.6 3 planos que se cortan en una recta.

oct 5-13:27

14 b) $\begin{cases} x+y+z=3 \\ 2x-y+z=2 \\ x-y+z=1 \end{cases}$

$\left(\begin{array}{ccc|c} 1 & 1 & 1 & 3 \\ 2 & -1 & 1 & 2 \\ 1 & -1 & 1 & 1 \end{array}\right) \sim \left(\begin{array}{ccc|c} 1 & 1 & 1 & 3 \\ 0 & -3 & -1 & -4 \\ 0 & -2 & 0 & -2 \end{array}\right)$

$F_2 = F_2 - 2F_1$ $\quad F_3 = -3F_3 + 2F_2$

$F_3 = F_3 - F_1$

$\left(\begin{array}{ccc|c} 1 & 1 & 1 & 3 \\ 0 & -3 & -1 & -4 \\ 0 & 0 & -2 & -2 \end{array}\right)$ $\begin{array}{l} x+y+z=3 \\ 3y+z=4 \\ 2z=2 \rightarrow z=1 \end{array}$ $\begin{array}{l} x=1 \\ y=1 \end{array}$

CLASIF SCD $\Rightarrow \exists!$ sol

SOL $(x,y,z)=(1,1,1)$

I.6 3 planos que se cortan en un pto.

oct 5-13:29

23) A (x) $\rightarrow x - \frac{1}{3}x = \frac{2}{3}x$))

B (y) $\rightarrow y + \frac{1}{3}x$))

C (z) $\rightarrow z$

60

$\boxed{x+y+z=60}$

$\frac{2}{3}x = z \quad 2x = 3z \quad \boxed{2x-3z=0}$

$y + \frac{1}{3}x = z \quad 3y + x = 3z \quad \boxed{x+3y-3z=0}$

$\left(\begin{array}{ccc|c} 1 & 1 & 1 & 60 \\ 2 & 0 & -3 & 0 \\ 1 & 3 & -3 & 0 \end{array}\right) \sim \left(\begin{array}{ccc|c} 1 & 1 & 1 & 60 \\ 0 & -2 & -5 & -120 \\ 0 & 2 & -4 & -60 \end{array}\right)$

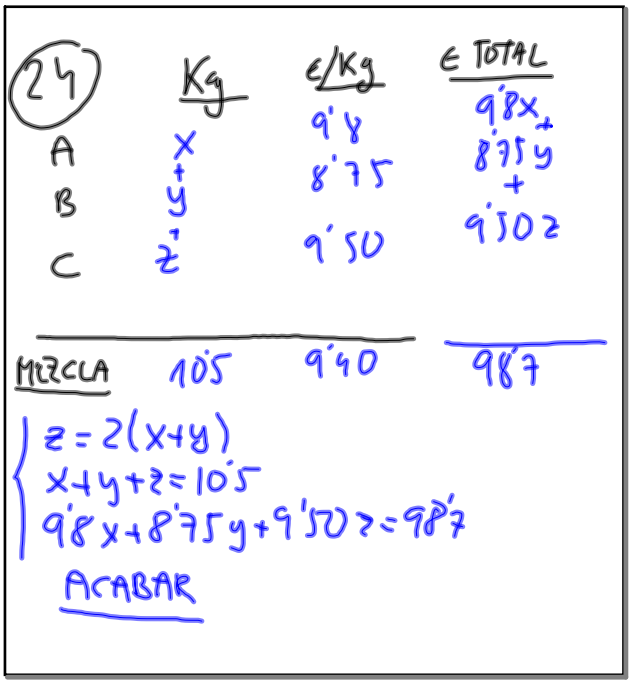
$F_2 = F_2 - 2F_1$ $\quad F_3 = F_3 + F_2$

$F_3 = F_3 - F_1$

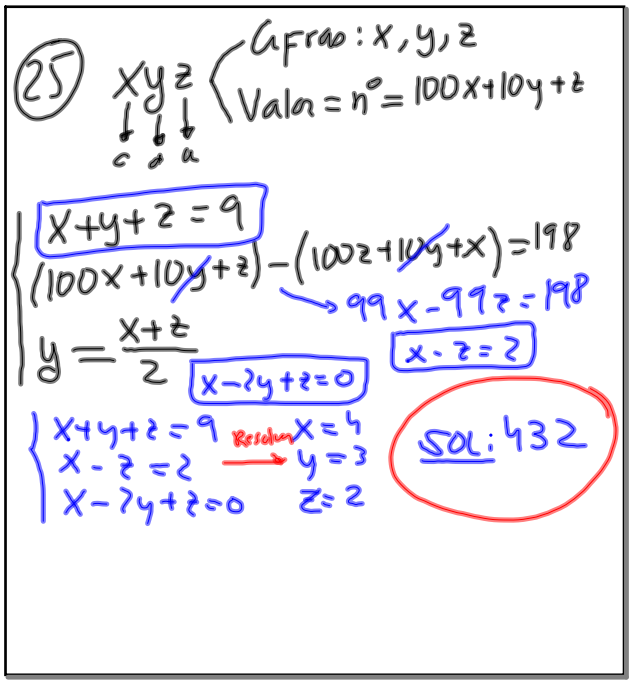
$\left(\begin{array}{ccc|c} 1 & 1 & 1 & 60 \\ 0 & -2 & -5 & -120 \\ 0 & 0 & -9 & -180 \end{array}\right)$ $\begin{array}{l} x+y+z=60 \rightarrow x=30 \\ 2y+5z=120 \rightarrow y=10 \\ 9z=180 \rightarrow z=20 \end{array}$

SOL: A $\rightarrow$ 30€ ; B $\rightarrow$ 10€ ; C $\rightarrow$ 20€

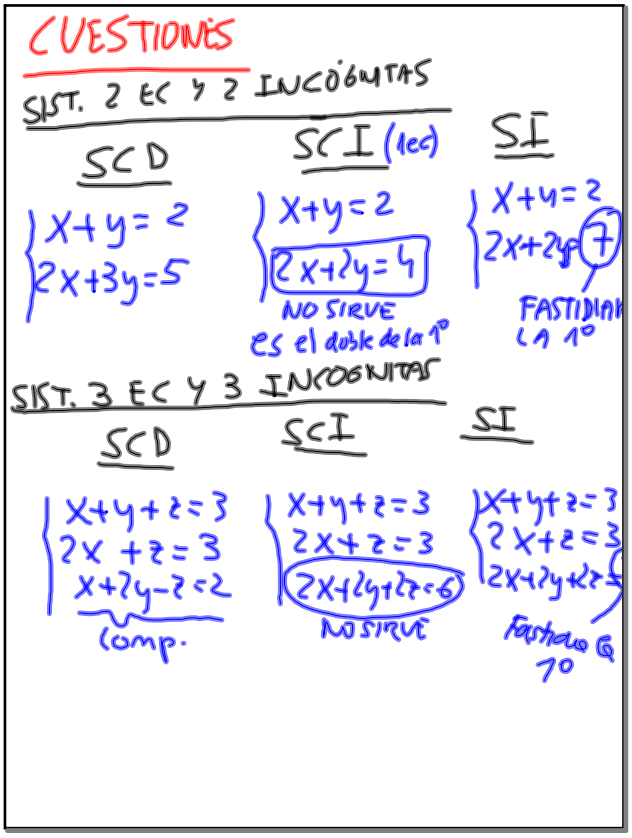
oct 5-13:31



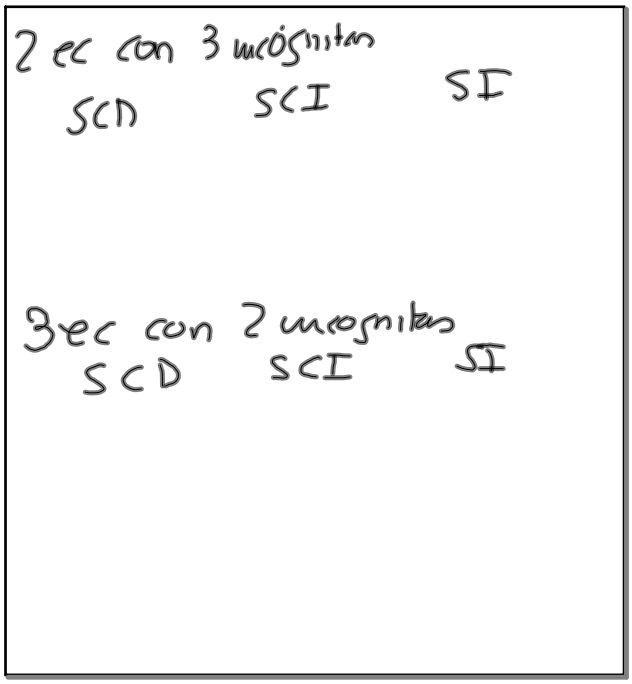
oct 5-13:36



oct 5-13:40



oct 5-13:44



oct 5-13:59

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oct 5-14:00