

$\mathcal{S}(a, b)$: Combine into one system

two

$$-2 \begin{pmatrix} 1 & 2 & 2 & | & 1 & 9 \\ 2 & 5 & 1 & | & 9 & -9 \\ 1 & 3 & 4 & | & 9 & -2 \end{pmatrix} \rightarrow 0$$

$$\begin{pmatrix} -2 & | & 1 & 9 \\ 5 & | & 7 & -9 \\ 6 & | & 8 & -11 \end{pmatrix}$$

$$\rightarrow \begin{pmatrix} 1 & 2 & -2 & | & 1 & 9 \\ 0 & 1 & 5 & | & 7 & -9 \\ 0 & 0 & 1 & | & 1 & -2 \end{pmatrix}$$

o triang

$$(a) \quad \begin{aligned} x_1 + 2x_2 - 2x_3 &= 1 \\ x_2 + 5x_3 &= 7 \\ x_3 &= 1 \end{aligned}$$

$$x_1 = 1 - 2 \cdot 2 + 2 \cdot 1 = -1$$

$$\Rightarrow x_2 = \dots$$

$$(b) \quad \begin{aligned} x_1 + 2x_2 - 2x_3 &= 9 \\ x_2 &= -9 \\ x_3 &= -2 \end{aligned}$$

$$x_1 = 9 - 2 \cdot (-9) + 2 \cdot (-2) = 1$$

$$\Rightarrow x_2 = \dots$$

(a)

Note: probl (6h) used elementary row to make sure we were dealing with kind of trick is important hand arithmetic but is not used w/ the coefficients are not simple integer