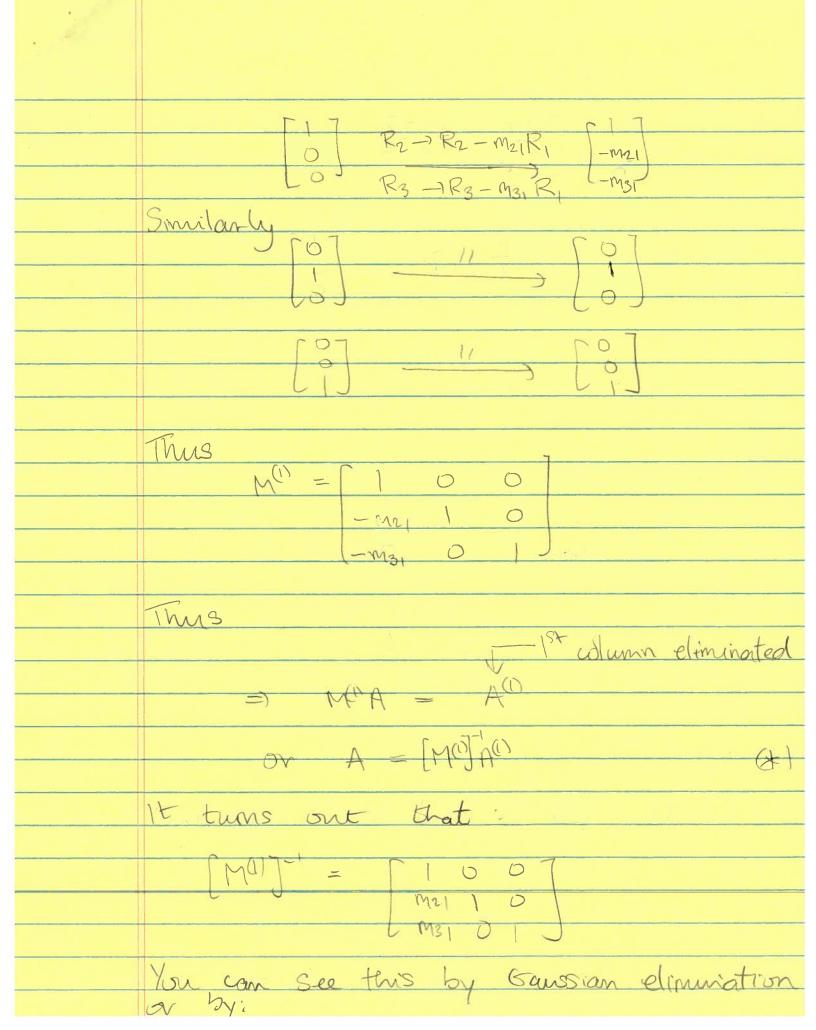
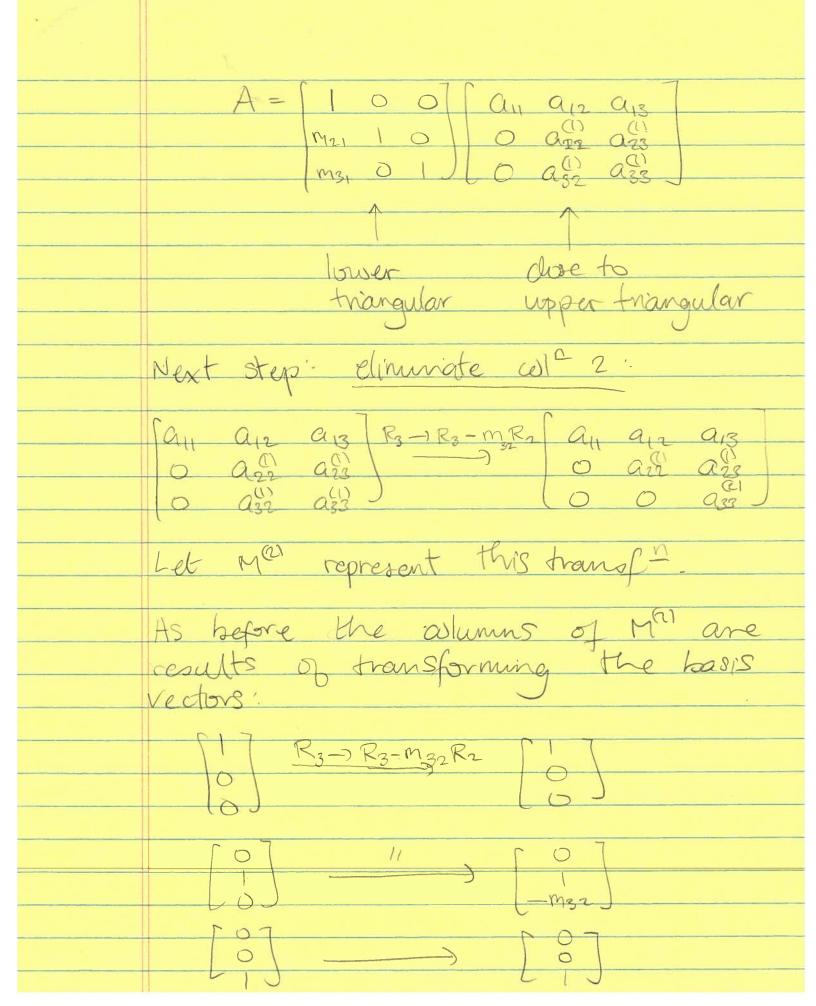
· Lec 13 Lu Factorization Forward Substitution (21 /1 + l22 /2 62 - R21 Y1 [Pny, + Pnz /2+ - + Pn,n-1/n-1lii yi = bi - Zelijyj $y_i = b_i - \sum_{j=1}^{i-1} \ell_{ij} y_j \quad i=1,$

42	La FACTORIZATION (Doulittle's Method)
*	Zen column 1:
	[an an and R2 -> R2 - M2 R1 and
	[a31 a32 a33]
	as these anotitute a linear transformation
	a concatenation of three alumn
	vectors:
	$\begin{bmatrix} a_{11} \\ a_{12} \\ a_{13} \end{bmatrix}, \begin{bmatrix} a_{12} \\ a_{12} \\ a_{23} \end{bmatrix} \in \mathbb{R}^3$ $\begin{bmatrix} a_{11} \\ a_{22} \\ a_{23} \end{bmatrix} \in \mathbb{R}^3$
	51) 0 481 3 482
	Clearly, transforming each when
	vector and concatenating them
	yields the transformed A.
	Let M' = matrix of transformation
	Since Ma Say, yields the first
	Let MO = matrix of transformation Since MO [1] Say, yields the first Column of MO, we may find the 1st
	column of the solving the now one
	Column of Me by applying the now ops.
	to los.



I + N Then = (1-00)(1+00) $I-N^2 = (I-N)(I+N)$ = (I-N)(I+N)Thus & =



Thus: Thus M21 A22 973 M21 A22 973 M3, M22 933 be combined into Note loss of information

10 Example 3 -1 -1 $R_2 - 2R$, $M_{21} = 2$ $R_3 - 3R$, $M_{31} = 3$ 0 R2 - 4R2 Thus