Vectors 10

Inverse Matrix For a system of linear equations, we con write it compactly using matrix notation.

Ax = b

to find a , we annot not divide b by A. We need to find the inverse matrix A-1

 $A^{-1}A = I$

then, A-1Ax = A-1b =DIX = A-1b =DX = A-1b

You on solve simultaneous equations by finding inverse of matrix co-efficients

2×2 Matrix

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Take A = (a b) and $A^{-1} = (\alpha_{11} \alpha_{12})$

We want A-A=I

$$\begin{pmatrix} \alpha_{11} & \alpha_{12} \\ \alpha_{21} & \alpha_{22} \end{pmatrix} \begin{pmatrix} \alpha & b \\ c & d \end{pmatrix} = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

now we use cramers rule

$$\alpha_{11} = \frac{1}{|\alpha|} \alpha_{12} = \frac{1}{|\alpha|} \alpha_{11} = \frac{1}{|\alpha|} \alpha_{12} = \frac{1}{|\alpha|} \alpha_{13} + \alpha_{12}\alpha + \alpha_{13}\alpha = 0$$

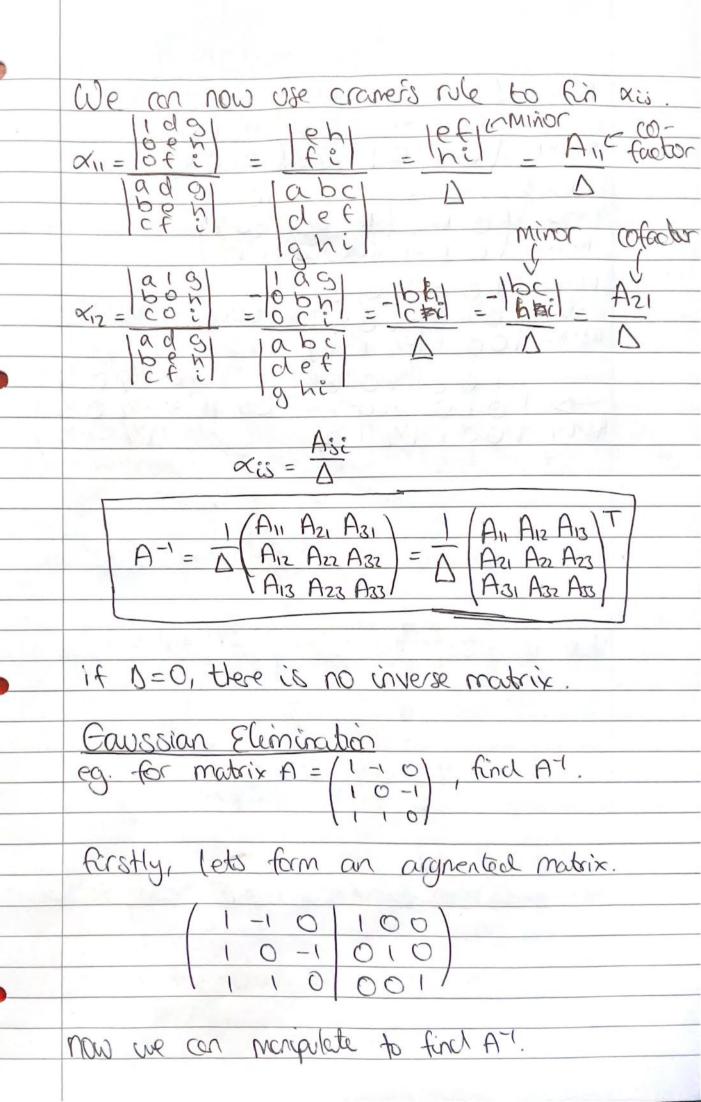
$$\alpha_{11}\alpha_{11} + \alpha_{12}\alpha_{12} + \alpha_{13}\alpha_{13} = 0$$

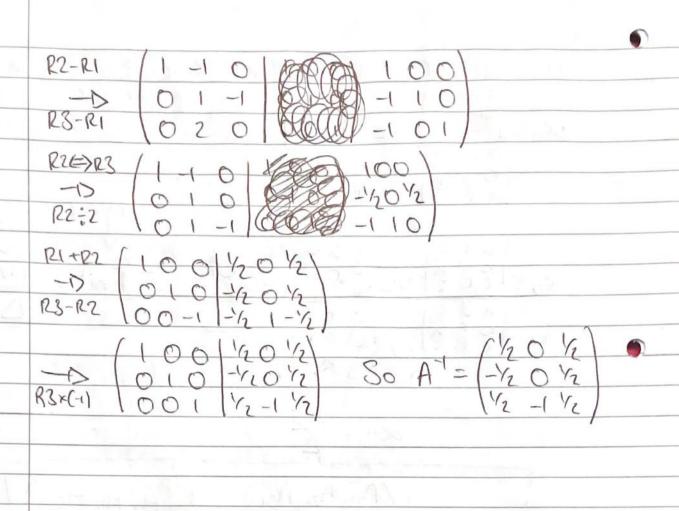
$$\alpha_{21}\alpha_{11} + \alpha_{22}\alpha_{12} + \alpha_{23}\alpha_{13} = 0$$

$$\alpha_{31}\alpha_{11} + \alpha_{32}\alpha_{12} + \alpha_{33}\alpha_{13} = 0$$

$$\alpha_{31}\alpha_{12} + \alpha_{32}\alpha_{13} + \alpha_{33}\alpha_{13} = 0$$

$$\alpha_{31}\alpha_{13} + \alpha_{32}\alpha_{13} + \alpha_$$





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