## Lecture 10: Homogenous Systems

A system of linear equations is homogenous if it can be written in the form

Eample

2, +262 - 629 +24=0

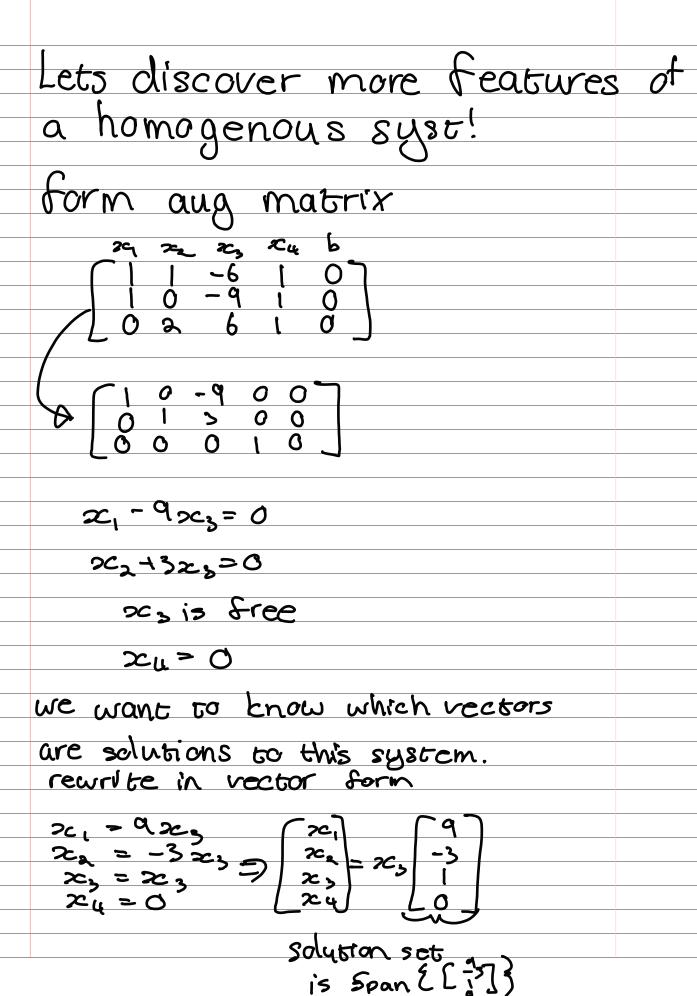
20, -923 -124 = 0 222 -625 -124 = 0

Az = 0 where

$$A = \begin{bmatrix} 1 & 1 & -6 & 1 \\ 1 & 0 & -9 & 1 \\ 0 & 2 & 6 & 1 \end{bmatrix}$$

o is a solution for a homogenous & system

thus always has atleast one solution



we will always be able to write the solution set of a homogenous system as the span of some number of vectors there will be a vector foreach free van/able if there are no free valo only solution is Span & 03 tquations of Planes plane: 2-39-442=0 aug matrix: [1 - > 4 0] in red. row ech 18= 20-34 42 =0 y is free 7 is free : solution set = Span (3)