

## Linear Algebra

00:00 - Introduction

04:00 - Vector spaces, the rank of a matrix, linear independence (quick recap)

10:00 - Given  $Ax=b$  where  $A$  is a  $5 \times 5$  matrix and if we know 4 solutions for this system of equations, totally how many solutions exist for this system?

16:00 - Eigen values, Eigen vectors (quick recap)

49:50 - Relation between orthogonality and linear independence of a set of vectors

58:30 - Find the value of  $x$  that makes the following matrix singular.  $A=[I_n, b; b^T, x]$ , where  $A$  is a  $(n+1) \times (n+1)$  matrix,  $I_n$  is an identity matrix of order  $n$ ,  $b$  is an  $n$ -dimensional vector and  $x$  is a scalar.

1:12:15 - Q & A