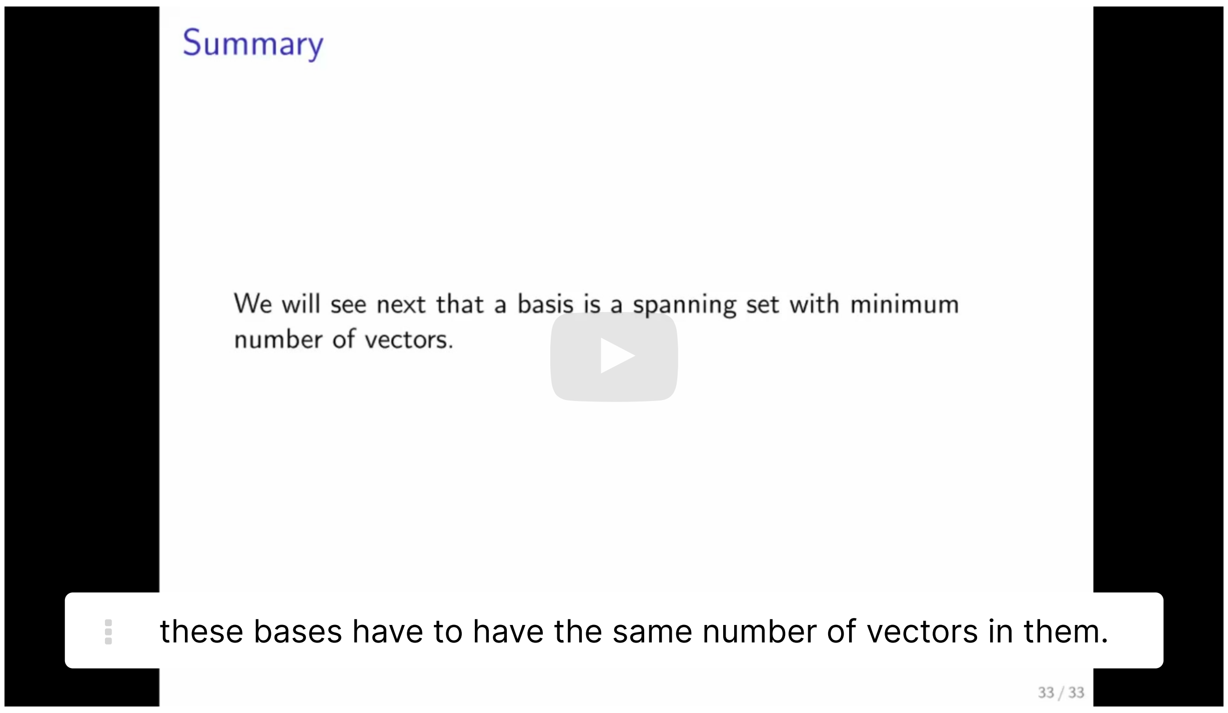
9.5.3 Bases for Subspaces

Bookmark this page

Week 9 due Dec 9, 2023 18:12 IST Completed

9.5.3 Bases for Subspaces

Video



5:47 / 5:47 2.0x

subspace.

I guess that should be an n here.

Anyway, you get the idea.

What we're going to see next is that a basis is a spanning set

with a minimum number of vectors, and indeed,

if you have two different basis for the same subspace then

these bases have to have the same number of vectors in them.

Video

Download video file

Transcripts

Download SubRip (.srt) file
Download Text (.txt) file

Reading Assignment

0 points possible (ungraded)
Read Unit 9.5.3 of the notes. [LINK]

- [x] Done

Submit

✔ Correct

Discussion

Hide Discussion

Topic: Week 9 / 9.5.3

Add a Post

Show all posts by recent activity

Linearly independent matrix and invertible matrix
Hi, At 2:15 Dr. Robert van de Geijn said "we know that these vectors are linearly independent because otherwise matrix A would not be inverti

Calculator

? # of equations vs unknowns
At 3:13, professor said "if you have fewer equations than unknowns, then we can find a non-0 vector Xn such that V*Xn = 0". How did we prove ... 2

Homework 9.5.3.1

1/1 point (graded)
The vectors $\{e_0, e_1, \ldots, e_{n-1}\} \subset \mathbb{R}^n$ are a basis for $\mathbb{R}^n$.

TRUE ✔ Answer: TRUE

Clearly, $\text{Span}\,(e_0, e_1, \ldots, e_{n-1}) = \mathbb{R}^n$. Now, the identity $I = \left(\begin{array}{c|c|c|c} e_0 & e_1 & \cdots & e_{n-1} \end{array} \right)$. Clearly, $Ix = 0$ only has the solution $x = 0$. Hence the columns of I are linearly independent which means the vectors $\{e_0, e_1, \ldots, e_{n-1}\}$ are linearly independent.

Submit

< Previous Next >

edX

About
Affiliates
edX for Business
Open edX
Careers
News

Legal

Terms of Service & Honor Code
Privacy Policy
Accessibility Policy
Trademark Policy
Sitemap
Cookie Policy
Your Privacy Choices

Connect

Idea Hub
Contact Us
Help Center
Security
Media Kit

Calculator