UTAustinX UT.5.05x
Linear Algebra - Foundations to Frontiers

Help

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1.2.2 Unit (Standard) Basis Vectors

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Week 1 due Oct 5, 2023 03:12 IST   Completed

1.2.2 Unit (Standard) Basis Vectors

(The more common term for this is "Standard Basis Vectors")

Throughout this course, we use the term "unit basis vector." This is more commonly used a "standard basis vector." Please make a note of this.

In the following video

At 1:16, a slide has the following:

- The symbols *i* and *j* denote *e_0*, *e_1* and *e_2* in 2D and 3D; and
- The symbol *k* denotes *e_2* in 3D

Removing *e_2* in the first line would make this slide more correct. (Fixing videos is painful, so this notification will have to do.)

Also, at 00:32 Robert says *e_0* instead of *e_j*

Start of transcript. Skip to the end.

Dr. Robert van de Geijn: There's a set of vectors

known as the unit basis vectors, or more commonly known as the standard basis

vectors, that we will be using throughout this course.

We now introduce that set of vectors.

So what are the unit basis vectors, or as they

▶ 0:00 / 0:00   ▸ 2.0x 🔊 ⛶ CC ❝

Video
⬇ Download video file

Transcripts
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Reading Assignment

0 points possible (ungraded)
Read Unit 1.2.2 of the notes. [LINK]

☑ Done

✔

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Discussion

Topic: Week 1 / 1.2.2

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?	**Definition** Why are all the terms before ej referred to as "j zeroes" and all the terms after ej referred to as "n-j-1 zeroes"?	3
💬	**So far very straitforward** So far the ideas are quite clear	5

Homework 1.2.2.1

1/1 point (graded)

Which of the following is not a unit basis vector?

○ $x = \begin{pmatrix} 0 \\ 0 \\ 1 \\ 0 \end{pmatrix}$

○ $x = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

⦿ $x = \begin{pmatrix} \sqrt{2}/2 \\ \sqrt{2}/2 \end{pmatrix}$

○ $x = \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}$

○ None of the above

✔

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