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9.2.1 When Solutions Are Not Unique

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

9.2.1 When Solutions Are Not Unique

Video

Start of transcript. Skip to the end.

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CC

“

Dr. Robert van de Geijn: Let's quickly demonstrate

that systems of linear equations may not have a unique solution.

Let's consider the system right here.

I don't know about you, but I can just look at that

and tell whether this has a unique

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Reading Assignment

0 points possible (ungraded)

Read Unit 9.2.1 of the notes. [\[LINK\]](#)

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Calculator

Homework 9.2.1.1

10/10 points (graded)

Evaluate

1. $\begin{pmatrix} 2 & -4 & -2 \\ -2 & 4 & 1 \\ 2 & -4 & 0 \end{pmatrix} \begin{pmatrix} 1 \\ 0 \\ -1 \end{pmatrix} =$

4	✓ Answer: 4
-3	✓ Answer: -3
2	✓ Answer: 2

$$\begin{pmatrix} 2 & -4 & -2 \\ -2 & 4 & 1 \\ 2 & -4 & 0 \end{pmatrix} \begin{pmatrix} 3 \\ 1 \\ -1 \end{pmatrix} =$$

4

-3

2

✔ Answer: 4

✔ Answer: -3

✔ Answer: 2

3. $\begin{pmatrix} 2 & -4 & -2 \\ -2 & 4 & 1 \\ 2 & -4 & 0 \end{pmatrix} \begin{pmatrix} -1 \\ -1 \\ -1 \end{pmatrix} =$

4	✓ Answer: 4
-3	✓ Answer: -3
2	✓ Answer: 2

Does the system $\begin{pmatrix} 2 & -4 & -2 \\ -2 & 4 & 1 \\ 2 & -4 & 0 \end{pmatrix} \begin{pmatrix} \chi_0 \\ \chi_1 \\ \chi_2 \end{pmatrix} = \begin{pmatrix} 4 \\ -3 \\ 2 \end{pmatrix}$ have multiple solutions?

YES ✓ Answer: YES

Clearly, this system has multiple solutions.

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