

Clicker Slides Math 35100

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Question 1:

Let $A = \begin{pmatrix} 1 & 1 & -2 \\ 2 & 3 & 1 \end{pmatrix}$

Is the vector $\begin{pmatrix} 7 \\ -5 \\ 1 \end{pmatrix}$ in $\mathcal{N}(A)$, the nullspace of A ?

1. Yes
2. No

Question 2:

Yes, the vector $\begin{pmatrix} 7 \\ -5 \\ 1 \end{pmatrix}$ is in $\mathcal{N}(A)$ where $A = \begin{pmatrix} 1 & 1 & -2 \\ 2 & 3 & 1 \end{pmatrix}$

Write the vector $\begin{pmatrix} -2 \\ 1 \end{pmatrix}$ as a linear combination of $\begin{pmatrix} 1 \\ 2 \end{pmatrix}$ and $\begin{pmatrix} 1 \\ 3 \end{pmatrix}$.

In this linear combination, what is the coefficient of $\begin{pmatrix} 1 \\ 2 \end{pmatrix}$?

A. 1 **B.** 3 **C.** 5 **D.** 7 **E.** 9

F. -1 **G.** -3 **H.** -5 **I.** -7 **J.** -9

Question 3:

$$\text{Let } B = \begin{pmatrix} 1 & 1 \\ 1 & 2 \\ 3 & 1 \end{pmatrix}$$

Is the vector $\begin{pmatrix} -1 \\ -3 \\ 1 \end{pmatrix}$ in $\mathcal{R}(B)$, the range of B ?

- 1.** Yes **2.** No

Question 4:

Yes, the vector $\begin{pmatrix} -1 \\ -3 \\ 1 \end{pmatrix}$ is in $\mathcal{R}(B)$ where $B = \begin{pmatrix} 1 & 1 \\ 1 & 2 \\ 3 & 1 \end{pmatrix}$

Write the vector $\begin{pmatrix} -1 \\ -3 \\ 1 \end{pmatrix}$ as a linear combination of $\begin{pmatrix} 1 \\ 1 \\ 3 \end{pmatrix}$ and $\begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix}$.

In this linear combination, what is the coefficient of $\begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix}$?

A. 1 **B.** 2 **C.** 3 **D.** 4 **E.** 5

F. -1 **G.** -2 **H.** -3 **I.** -4 **J.** -5