CH 4.6 2/24/13 4:35 PM

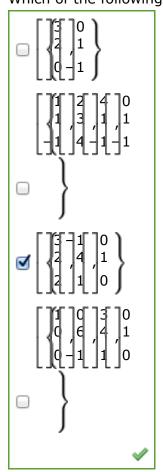
Web**Assign**CH 4.6 (Homework)

Yinglai Wang MA 265 Spring 2013, section 132, Spring 2013 Instructor: Alexandre Eremenko

Current Score: 20 / 20 Due: Thursday, February 28 2013 11:40 PM EST

1. 3.33/3.33 points | Previous Answers KolmanLinAlg9 4.6.002.

Which of the following sets of vectors are bases for \mathbb{R}^3 ? (Select all that apply.)



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2. 3.33/3.33 points | Previous Answers

KolmanLinAlg9 4.6.003.

Which of the following sets of vectors are bases for R_4 ? (Select all that apply.)

3. 3.33/3.33 points | Previous Answers

KolmanLinAlg9 4.6.007.

Determine which of the given subsets forms a basis for R^3 . Express the vector

as a linear combination of the vectors in each subset that is a basis. (If not a basis, enter NA into each answer blank.)

(b)
$$\left\{ \begin{bmatrix} 1 \\ 6 \\ 3 \end{bmatrix}, \begin{bmatrix} 1 \\ 1 \\ 3 \end{bmatrix}, \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix} \right\}$$
$$\left[\begin{bmatrix} 6 \\ 1 \\ 3 \end{bmatrix} = \begin{bmatrix} NA \\ \checkmark \end{bmatrix} \begin{bmatrix} 1 \\ 6 \\ 3 \end{bmatrix} + \begin{bmatrix} NA \\ \checkmark \end{bmatrix} \begin{bmatrix} 6 \\ 1 \\ 3 \end{bmatrix} + \begin{bmatrix} NA \\ \checkmark \end{bmatrix} \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}$$

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4. 3.33/3.33 points | Previous Answers

KolmanLinAlg9 4.6.008.

Determine which of the given subsets forms a basis for R^3 . Express the vector

as a linear combination of the vectors in each subset that is a basis. (If not a basis, enter NA into each answer blank.)

(a)
$$\left\{ \begin{bmatrix} 2\\1\\3 \end{bmatrix}, \begin{bmatrix} 1\\12\\1 \end{bmatrix}, \begin{bmatrix} 1\\1\\4 \end{bmatrix}, \begin{bmatrix} 1\\5\\1 \end{bmatrix} \right\}$$

$$\left[\begin{bmatrix} 2\\1\\3 \end{bmatrix} = \begin{bmatrix} NA \\ \checkmark \end{bmatrix} \begin{bmatrix} 2\\1\\3 \end{bmatrix} + \begin{bmatrix} NA \\ \checkmark \end{bmatrix} \begin{bmatrix} 1\\1\\2\\1 \end{bmatrix} + \begin{bmatrix} NA \\ \checkmark \end{bmatrix} \begin{bmatrix} 1\\5\\1 \end{bmatrix}$$

(b)
$$\left\{ \begin{bmatrix} 1\\1\\2 \end{bmatrix}, \begin{bmatrix} 12\\12\\0 \end{bmatrix}, \begin{bmatrix} 3\\4\\-1 \end{bmatrix} \right\}$$
$$\begin{bmatrix} 2\\1\\3 \end{bmatrix} = \underbrace{1} \quad \checkmark \quad \begin{bmatrix} 1\\1\\2 \end{bmatrix} + \underbrace{1/3} \quad \checkmark \quad \begin{bmatrix} 12\\12\\0 \end{bmatrix} + \underbrace{-1} \quad \checkmark \quad \begin{bmatrix} 3\\4\\-1 \end{bmatrix}$$

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5. 3.33/3.33 points | Previous Answers

KolmanLinAlg9 4.6.012.

Find a basis for the subspace W of R_4 spanned by the set of vectors

$$\bigcirc \left\{ \begin{bmatrix} 1 & 1 & 0 & -1 \end{bmatrix}, \begin{bmatrix} -2 & -2 & 3 & 7 \end{bmatrix}, \begin{bmatrix} 0 & 0 & 3 & 5 \end{bmatrix} \right\}$$

$$\bigcirc \left\{ \begin{bmatrix} 1 & 1 & -6 & -11 \end{bmatrix}, \begin{bmatrix} 1 & 1 & 0 & -1 \end{bmatrix}, \begin{bmatrix} -2 & -2 & 3 & 7 \end{bmatrix} \right\}$$

$$\bigcirc \left\{ \begin{bmatrix} 0 & 0 & 3 & 5 \end{bmatrix}, \begin{bmatrix} 1 & 1 & -6 & -11 \end{bmatrix}, \begin{bmatrix} -2 & -2 & 3 & 7 \end{bmatrix} \right\}$$

$$\bigcirc \left\{ \begin{bmatrix} 1 & 1 & 0 & -1 \end{bmatrix}, \begin{bmatrix} 1 & 1 & -6 & -11 \end{bmatrix}, \begin{bmatrix} 0 & 0 & 3 & 5 \end{bmatrix} \right\}$$

What is dim W?

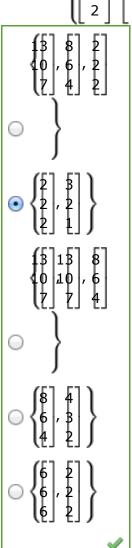
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6. 3.35/3.35 points | Previous Answers

KolmanLinAlg9 4.6.011.

Find a basis for the subspace W of \mathbb{R}^3 spanned by

$$\left\{ \begin{bmatrix} 2\\2\\2\\2 \end{bmatrix}, \begin{bmatrix} 3\\2\\1 \end{bmatrix}, \begin{bmatrix} 13\\10\\7 \end{bmatrix}, \begin{bmatrix} 8\\6\\4 \end{bmatrix} \right\}$$



What is the dimension of W?

