Web**Assign**CH 4.6 - 2 (Homework)

Yinglai Wang

MA 265 Spring 2013, section 132, Spring 2013

Instructor: Alexandre Eremenko

Current Score : 20 / 20 **Due :** Thursday, March 7 2013 11:40 PM EST

The due date for this assignment is past. Your work can be viewed below, but no changes can be made.

Important! Before you view the answer key, decide whether or not you plan to request an extension. Your Instructor may *not* grant you an extension if you have viewed the answer key. Automatic extensions are not granted if you have viewed the answer key.

Request Extension View Key

1. 2.5/2.5 points | Previous Answers

KolmanLinAlg9 4.6.014.

Let

$$S = \left\{ \begin{bmatrix} 5 & 0 \\ 0 & 5 \end{bmatrix}, \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}, \begin{bmatrix} 2 & 2 \\ 2 & 2 \end{bmatrix}, \begin{bmatrix} -1 & 5 \\ 5 & -1 \end{bmatrix} \right\}.$$

Find a basis for the subspace $W = \text{span } S \text{ of } M_{22}$.

$$\left\{ \begin{cases} 52 \\ 25 \end{cases} \right\}
\left\{ \begin{cases} 61 \\ -10 \end{cases} \right\}
\left\{ \begin{cases} 25 \\ 52 \end{cases} \right\}
\left\{ \begin{cases} 10 - 10 \\ 01 \end{cases} \right\}
\left\{ \begin{cases} 10 & 01 \\ 01 & 10 \end{cases} \right\}
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2. 2.5/2.5 points | Previous Answers

KolmanLinAlg9 4.6.015.

Find all values of a for which

$$\left\{ \left[\begin{array}{cccc} a^2 & 0 & 1 \end{array}\right], \left[\begin{array}{cccc} 0 & a & 7 \end{array}\right], \left[\begin{array}{cccc} 1 & 0 & 1 \end{array}\right] \right\}$$

is not a basis for R_3 . (Enter your answers as a comma-separated list.)

a =

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3. 2.5/2.5 points | Previous Answers

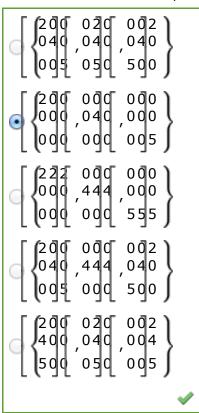
KolmanLinAlg9 4.6.016.

Find a basis for the subspace W of M_{33} consisting of all symmetric matrices.

4. 2.5/2.5 points | Previous Answers

KolmanLinAlg9 4.6.017.

Find a basis for the subspace of M_{33} consisting of all diagonal matrices.



5. 2.5/2.5 points | Previous Answers

KolmanLinAlg9 4.6.023.

Find the dimensions of the given subspaces of R_4 .

- (a) All vectors of the form $\begin{bmatrix} a & b & c & d \end{bmatrix}$, where d = b + c.
- 3 🧹
- (b) All vectors of the form $\begin{bmatrix} a & b & c & d \end{bmatrix}$, where b = a c and d = a + c.
- 2 🥒

6. 2.5/2.5 points | Previous Answers

KolmanLinAlg9 4.6.024.

Find the dimensions of the given subspaces of R_4 .

- (a) All vectors of the form $\begin{bmatrix} a & b & c & d \end{bmatrix}$, where c = d.
- 3
- (b) All vectors of the form $\begin{bmatrix} b+c & b-a & a+c & -b+a \end{bmatrix}$.
- 2 🥠

7. 2.5/2.5 points | Previous Answers

KolmanLinAlg9 4.6.019.

Find a basis for the given subspaces of R^3 .

(a) All vectors of the form $\begin{bmatrix} a \\ b \\ c \end{bmatrix}$, where c = a + b

1	0
0	1
1	1

4

(b) All vectors of the form $\begin{bmatrix} a \\ b \\ c \end{bmatrix}$, where a = c

0	1
1	0
0	1

 \checkmark

(c) All vectors of the form $\begin{bmatrix} a \\ b \\ c \end{bmatrix}$, where 4a + b - c = 0

1	0
0	1
4	1

8. 2.5/2.5 points | Previous Answers

KolmanLinAlg9 4.6.020.

Find a basis for the given subspaces of R^3 or R^4 .

(a) All vectors of the form $\begin{bmatrix} a \\ b \\ c \end{bmatrix}$, where a = 0

0	0
1	0
0	1

4

(b) All vectors of the form $\begin{bmatrix} a+c \\ a-b \\ b+c \\ -a+b \end{bmatrix}$

1	0
1	-1
0	1
-1	1

4

(c) All vectors of the form $\begin{bmatrix} a \\ b \\ c \end{bmatrix}$, where a - b + 3c = 0

1	0
1	3
0	1

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