Web**Assign**CH 4.4 (Homework)

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MA 265 Spring 2013, section 132, Spring 2013

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**Current Score :** 18.57 / 20 **Due :** Thursday, February 28 2013 11:40 PM EST

1. 1.42/2.85 points | Previous Answers

KolmanLinAlg9 4.4.004.

In each part, determine whether the given vector A in  $M_{22}$  belongs to span  $\{A_1, A_2, A_3\}$ , where

$$A_1 = \begin{bmatrix} 1 & -1 \\ 0 & 3 \end{bmatrix}$$
,  $A_2 = \begin{bmatrix} 1 & 1 \\ 0 & 2 \end{bmatrix}$ , and  $A_3 = \begin{bmatrix} 5 & 5 \\ -1 & 1 \end{bmatrix}$ .

(a) 
$$A = \begin{bmatrix} 8 & 4 \\ -1 & 9 \end{bmatrix}$$





(b) 
$$A = \begin{bmatrix} -13 & -15 \\ 3 & 2 \end{bmatrix}$$

- Yes
- No

(c) 
$$A = \begin{bmatrix} -14 & -14 \\ 3 & 2 \end{bmatrix}$$

- Yes
- O No

(d) 
$$A = \begin{bmatrix} -9 & -9 \\ 2 & 1 \end{bmatrix}$$

- Yes
- No

CH 4.4 2/24/13 3:11 PM

2. 2.85/2.85 points | Previous Answers

KolmanLinAlg9 4.4.005.

Which of the following sets of vectors span  $R_2$ ?

- $\odot$  spans  $R_2$
- $\bigcirc$  does not span  $R_2$

(b) 
$$[0 \ 0], [1 \ 1], [-4 \ -4]$$
spans  $R_2$ 

 $\odot$  does not span  $R_2$ 

- $\odot$  spans  $R_2$
- $\bigcirc$  does not span  $R_2$

(d) 
$$[6 \ 12], [-3 \ 6]$$

- spans R<sub>2</sub>
- $\bigcirc$  does not span  $R_2$

3. 2.85/2.85 points | Previous Answers

KolmanLinAlg9 4.4.006.

Which of the following sets of vectors span  $R^4$ ?

(a) 
$$\left\{ \begin{bmatrix} 1\\-1\\5\\0 \end{bmatrix}, \begin{bmatrix} 0\\1\\1\\1 \end{bmatrix} \right\}$$

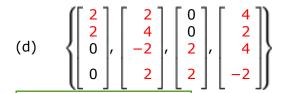
- o spans R<sup>4</sup>
- o does not span R4

(b) 
$$\left\{ \begin{bmatrix} 3\\2\\1\\0 \end{bmatrix}, \begin{bmatrix} 1\\2\\-1\\0 \end{bmatrix}, \begin{bmatrix} 0\\0\\1 \end{bmatrix} \right\}$$

- o spans R<sup>4</sup>
- does not span R<sup>4</sup>

(c)  $\left\{ \begin{bmatrix} 3 \\ 2 \\ -1 \\ 6 \end{bmatrix}, \begin{bmatrix} 4 \\ 0 \\ 0 \\ 6 \end{bmatrix}, \begin{bmatrix} 3 \\ 2 \\ -1 \\ 6 \end{bmatrix}, \begin{bmatrix} 5 \\ 6 \\ -3 \\ 6 \end{bmatrix}, \begin{bmatrix} 0 \\ 4 \\ -2 \\ -3 \end{bmatrix} \right\}$ 

- o spans R<sup>4</sup>
- $\bullet$  does not span  $R^4$



- spans  $R^4$
- odoes not span R<sup>4</sup>

## 4. 2.85/2.85 points | Previous Answers

KolmanLinAlg9 4.4.007.

Which of the following sets of vectors span  $R_4$ ?

- (a) [1 0 0 1], [0 1 0 0], [1 1 1 1], [1 1 1 0]
- $\odot$  spans  $R_4$
- $\bigcirc$  does not span  $R_4$
- (b) [2 4 2 0], [1 1 -1 0], [0 0 0 1]
- spans R<sub>4</sub>
- does not span R<sub>4</sub>
- (c) [3 2 -1 2], [2 0 0 1], [3 2 -1 2], [5 6 -3 2], [0 4 -2 -1]
- $\bigcirc$  spans  $R_4$
- $\odot$  does not span  $R_4$
- (d) [3 3 0 0], [1 2 -1 1], [0 0 3 3], [2 1 2 1]
- $\odot$  spans  $R_4$
- $\bigcirc$  does not span  $R_4$

## **5.** 2.85/2.85 points | Previous Answers

KolmanLinAlg9 4.4.010.

Does the set

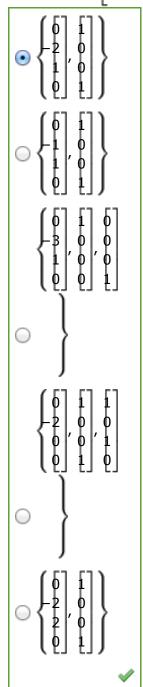
$$S = \left\{ \begin{bmatrix} 1 & 1 \\ 0 & 0 \end{bmatrix}, \begin{bmatrix} 0 & 0 \\ 1 & 1 \end{bmatrix}, \begin{bmatrix} 1 & 0 \\ 1 & 1 \end{bmatrix}, \begin{bmatrix} 0 & 1 \\ 1 & 1 \end{bmatrix} \right\}$$

span  $M_{22}$ ?

- Yes
- No

Find a set of vectors spanning the null space of

$$A = \begin{bmatrix} 1 & 1 & 2 & -1 \\ 2 & 3 & 6 & -2 \\ -2 & 1 & 2 & 2 \\ 0 & -2 & -4 & 0 \end{bmatrix}.$$



## 7. 2.9/2.9 points | Previous Answers

KolmanLinAlg9 4.4.003.

In each part, determine whether the given vector p(t) in  $P_2$  belongs to span  $\{p_1(t), p_2(t), p_3(t)\}$ , where

$$p_1(t) = t^2 + 2t + 1$$
,  $p_2(t) = t^2 + 3$ , and  $p_3(t) = t - 1$ .

- (a)  $p(t) = t^2 + t + 2$
- Yes
- O No
- ✓
- (b)  $p(t) = 2t^2 + 2t + 18$
- Yes
- No
- **V**
- (c)  $p(t) = -t^2 + t 8$
- Yes
- No
- 4
- (d)  $p(t) = -2t^2 + 3t + 2$ 
  - Yes
- No