Web**Assign**

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MA 265 Spring 2013, section 132, Spring 2013
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CH 2.3 (Homework)

Current Score : 20 / 20   **Due :** Thursday, January 31 2013 11:40 PM EST

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1. 3.33/3.33 points | Previous Answers   KolmanLinAlg9 2.3.007.

Find the inverse of $A = \begin{bmatrix} 2 & 1 \\ 1 & 1 \end{bmatrix}$.

1	−1
−1	2

✔

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2. 3.33/3.33 points | Previous Answers   KolmanLinAlg9 2.3.008.

Find the inverse of $A = \begin{bmatrix} 3 & -1 & -2 \\ -2 & 1 & 2 \\ 4 & -2 & -3 \end{bmatrix}$.

1	1	0
2	−1	−2
0	2	1

✔

3. 3.33/3.33 points | Previous Answers   KolmanLinAlg9 2.3.009.

Which of the given matrices are singular? For the non-singular ones, find the inverse. (If the matrix is singular, write "SINGULAR" in one of the blanks.)

(a) $\begin{bmatrix} 1 & 3 \\ 4 & 12 \end{bmatrix}$

SINGULAR	

✔

(b) $\begin{bmatrix} 1 & 3 \\ -2 & 6 \end{bmatrix}$

1/2	-1/4
1/6	1/12

✔

(c) $\begin{bmatrix} 4 & 3 & 6 \\ 1 & 1 & 2 \\ 3 & 3 & 7 \end{bmatrix}$

1	-3	0
-1	10	-2
0	-3	1

✔

(d) $\begin{bmatrix} 1 & 2 & 3 \\ 1 & 1 & 2 \\ 0 & 1 & 1 \end{bmatrix}$

SINGULAR		

✔

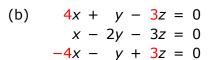**4.** 3.33/3.33 points | Previous Answers KolmanLinAlg9 2.3.017.

Which of the following homogeneous systems have a nontrivial solution?
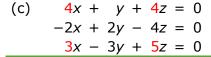
(a) $x + 2y + 3z = 0$
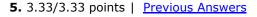 $2y + 2z = 0$
         $x + 2y + 3z = 0$

○ ⦿ The system has a nontrivial solution.

○ The system does not have a nontrivial solution.

✔

(b) $4x + y - 3z = 0$
          $x - 2y - 3z = 0$
        $-4x - y + 3z = 0$

⦿ The system has a nontrivial solution.

○ The system does not have a nontrivial solution.

✔

(c) $4x + y + 4z = 0$
       $-2x + 2y - 4z = 0$
        $3x - 3y + 5z = 0$

○ The system has a nontrivial solution.

⦿ The system does not have a nontrivial solution.

✔

5. 3.33/3.33 points | Previous Answers KolmanLinAlg9 2.3.020.

For what values of a does the homogeneous system

$(a - 1)x + 4y = 0$
$4x + (a - 1)y = 0$

have a nontrivial solution? (Enter your answers as a comma-separated list.)

$a =$

✔

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6. 3.35/3.35 points | [Previous Answers](#)   KolmanLinAlg9 2.3.019.

Find all value(s) of *a* for which the inverse of

$$A = \begin{bmatrix} 1 & 3 & 0 \\ 1 & 0 & 0 \\ 1 & 6 & a \end{bmatrix}$$

does not exist. (Enter your answers as a comma-separated list.)

a =   ✔

What is A^{-1} (assuming its existence)?

$$A^{-1} = \begin{bmatrix} 0 & 1 & 0 \\ 1/3 & -1/3 & 0 \\ -2/a & 1/a & 1/a \end{bmatrix}$$

✔