

← MAT230, section 30 T5 2021 SEGALA, Spring 2021

Unit 3 Homework Assignment (3.3, 3.4) (Homework)

INSTRUCTOR
James Segala
 Post University,CT

Current Score

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
POINTS	-/12	-/12	-/1	-/12	-/12	-/1	-/3	-/9	-/9	-/9	-/9	-/9	-/4	-/2	-/4	-/15	-/17	-/24

TOTAL SCORE

-/164	0.0%
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Due Date

SAT, MAY 1, 2021

8:59 PM PDT

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Assignment Submission & Scoring

Assignment Submission
 For this assignment, you submit answers by question parts. The number of submissions remaining for each question part only changes if you submit or change the answer.

Assignment Scoring
 Your best submission for each question part is used for your score.

1. [-/12 Points]

DETAILS

BERRFINMATH1 3.3.001.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the augmented matrix representing the system of equations.

$$\begin{cases} x_1 + x_2 + x_3 = 4 \\ x_1 + 4x_2 + x_3 = 3 \\ x_1 + 4x_2 + 5x_3 = 2 \end{cases}$$

$$\left(\begin{array}{ccc|c} \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} & \boxed{} \end{array} \right)$$

Additional Materials

• [eBook](#)

Show My Work (Optional) ?

Find the augmented matrix representing the system of equations.

$$\begin{cases} 3x_1 + x_2 + 4x_3 + 4x_4 + 5x_5 = 3 \\ x_1 + x_2 + 2x_3 + 4x_4 + 3x_5 = -2 \end{cases}$$

$$\left(\begin{array}{ccccc|c} \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} \end{array} \right)$$

Additional Materials

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Show My Work (Optional) ?

Interpret the row-reduced matrix as the solution of a system of equations. (Enter your answers as a comma-separated list. If the system is inconsistent, answer INCONSISTENT. If the system is dependent, parametrize the solutions in terms of the parameter t .)

$$\left(\begin{array}{ccc|c} 1 & 0 & 0 & 5 \\ 0 & 1 & 0 & 9 \\ 0 & 0 & 1 & -4 \end{array} \right)$$

$$(x_1, x_2, x_3) = ($$

$$\left. \begin{array}{l} \boxed{} \\ \boxed{} \end{array} \right)$$

Additional Materials

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Show My Work (Optional) ?

Use an appropriate row operation or sequence of row operations to find the equivalent row-reduced matrix.

$$\left(\begin{array}{ccc|c} 0 & 1 & 0 & 8 \\ 1 & 0 & 0 & 9 \\ 0 & 0 & 1 & 6 \end{array} \right)$$

$$\left(\begin{array}{ccc|c} \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} & \boxed{} \end{array} \right)$$

Additional Materials

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Show My Work(Optional) 

Use an appropriate row operation or sequence of row operations to find the equivalent row-reduced matrix.

$$\left(\begin{array}{ccc|c} 1 & 0 & 1 & 7 \\ 0 & 1 & 0 & 5 \\ 0 & 0 & 1 & 9 \end{array} \right)$$

$$\left(\begin{array}{ccc|c} \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} & \boxed{} \end{array} \right)$$

Additional Materials

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Show My Work(Optional) 

Solve the system of equations by the Gauss-Jordan method. (Enter your answers as a comma-separated list. If the system is inconsistent, answer INCONSISTENT. If the system is dependent, parametrize the solutions in terms of the parameter t .)

$$\begin{cases} x_1 + x_2 + x_3 = 0 \\ x_1 + 2x_2 + 2x_3 = -3 \\ x_1 + 3x_2 + 2x_3 = -7 \end{cases}$$

$(x_1, x_2, x_3) = \left(\begin{array}{c} \boxed{} \\ \boxed{} \\ \boxed{} \end{array} \right)$

Additional Materials

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Show My Work(Optional) 

Formulate the situation as a system of linear equations. Be sure to state clearly the meaning of each variable. Solve using the Gauss-Jordan method. State your final answer in terms of the original question. (If the system is inconsistent, answer INCONSISTENT. If the system is dependent, parametrize the solutions in terms of the parameters u and v .)

A large commercial farm needs 40,000 pounds of potash, 75,500 pounds of nitrogen, and 28,500 pounds of phosphoric acid. Three brands of fertilizer, GrowRite, MiracleMix, and GreatGreen, are available and contain the amounts of potash, nitrogen, and phosphoric acid per truckload listed in the table. How many truckloads of each brand should be used to provide the required potash, nitrogen, and phosphoric acid?

$$x_1 = \boxed{} \text{ truckloads of GrowRite}$$

$$x_2 = \boxed{} \text{ truckloads of MiracleMix}$$

$$x_3 = \boxed{} \text{ truckloads of GreatGreen}$$

(Pounds per truckload)	GrowRite	MiracleMix	GreatGreen
Potash	400	600	700
Nitrogen	500	1000	1600
Phosphoric acid	300	400	500

Additional Materials

• [eBook](#)

Show My Work(Optional) ?

Use the given matrix to find the expression.

$$A = \begin{pmatrix} 7 & 2 & 8 \\ 5 & 5 & 3 \\ 4 & 7 & 6 \end{pmatrix}; A^t$$

$$A^t = \begin{pmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{pmatrix}$$

Additional Materials

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Show My Work(Optional) ?

Use the given matrix to find the expression.

$$C = \begin{pmatrix} 8 & 9 & 4 \\ 4 & 3 & 8 \\ 6 & 4 & 7 \end{pmatrix}; 3C$$

$$3C = \begin{pmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{pmatrix}$$

Additional Materials

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Show My Work(Optional) ?

Use the given matrix to find the expression.

$$B = \begin{pmatrix} 3 & 1 & 4 \\ 5 & 4 & 9 \\ 6 & 8 & 3 \end{pmatrix}; -B$$

$$-B = \begin{pmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{pmatrix}$$

Additional Materials

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Show My Work(Optional) 

Use the given matrices to find the expression.

$$A = \begin{pmatrix} 9 & 9 & 6 \\ 1 & 3 & 1 \\ 8 & 5 & 5 \end{pmatrix} \quad C = \begin{pmatrix} 4 & 6 & 8 \\ 5 & 9 & 7 \\ 1 & 1 & 1 \end{pmatrix}; A + C$$

$$A + C = \begin{pmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{pmatrix}$$

Additional Materials

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Show My Work(Optional) 

Use the given matrices to find the expression.

$$A = \begin{pmatrix} 8 & 4 & 8 \\ 3 & 3 & 1 \\ 7 & 4 & 5 \end{pmatrix} \quad C = \begin{pmatrix} 5 & 7 & 2 \\ 3 & 1 & 6 \\ 8 & 7 & 7 \end{pmatrix}; C - (A + I)$$

$$C - (A + I) = \begin{pmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{pmatrix}$$

Additional Materials

• [eBook](#)

Show My Work(Optional) 

Find the matrix product.

$$\begin{pmatrix} 5 \\ 3 \end{pmatrix} \cdot (1 \ 3)$$

$$\begin{pmatrix} \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \end{pmatrix}$$

Additional Materials

• [eBook](#)

Show My Work(Optional) 

Find the matrix product.

$$\begin{pmatrix} 1 & 4 & 2 \\ 4 & 5 & 3 \end{pmatrix} \begin{pmatrix} 1 \\ -1 \\ 2 \end{pmatrix}$$
$$\begin{pmatrix} \\ \end{pmatrix}$$

Additional Materials

- [eBook](#)

Show My Work(Optional) 

Find the matrix product.

$$\begin{pmatrix} 1 & 2 & 1 \\ 1 & 1 & 3 \end{pmatrix} \begin{pmatrix} 1 & 1 \\ 3 & 2 \\ 2 & 2 \end{pmatrix}$$
$$\begin{pmatrix} & \\ & \end{pmatrix}$$

Additional Materials

- [eBook](#)

Show My Work(Optional) 

Rewrite the system of linear equations as a matrix equation $AX = B$.

$$\begin{cases} x_1 + 4x_2 + 2x_3 = 6 \\ x_1 + x_2 + x_3 = 4 \\ 4x_1 + 3x_2 + 2x_3 = 3 \end{cases}$$

$$\begin{pmatrix} & & \\ & & \\ & & \end{pmatrix} \begin{pmatrix} \\ \\ \end{pmatrix} = \begin{pmatrix} \\ \\ \end{pmatrix}$$

Additional Materials

- [eBook](#)

Show My Work(Optional) 

Rewrite the system of linear equations as a matrix equation $AX = B$.

$$\begin{cases} 4x_1 + 2x_2 - 2x_3 + x_4 + 5x_5 = 2 \\ x_1 + x_2 - 4x_3 + x_4 + 3x_5 = 6 \end{cases}$$

$$\left(\begin{array}{ccccc} \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} \end{array} \right) \begin{pmatrix} \boxed{} \\ \boxed{} \end{pmatrix} = \begin{pmatrix} \boxed{} \\ \boxed{} \end{pmatrix}$$

Additional Materials

• [eBook](#)

Show My Work(Optional)

Formulate the situation in matrix form. Be sure to indicate the meaning of your rows and columns. Find the requested quantities using the appropriate matrix arithmetic.

A car dealer sells sedans, station wagons, vans, and pickup trucks at sales lots in Oakdale and Roanoke. The "dealer markup" is the difference between the sticker price and the dealer invoice price. The dealer invoice prices at both locations are the same: \$14,000 per sedan, \$18,000 per wagon, \$24,000 per van, and \$27,000 per pickup. The sticker prices at the Oakdale lot are \$17,900 per sedan, \$22,900 per wagon, \$27,900 per van, and \$30,900 per pickup, while at the Roanoke lot the sticker prices are \$18,900 per sedan, \$21,900 per wagon, \$28,900 per van, and \$29,900 per pickup. Represent these prices as a dealer invoice matrix D and a sticker price matrix S . Use these matrices to find the dealer markup matrix M for these vehicles at these sales lots. (Let row 1 represent the dealer in Oakdale and row 2 represent the dealer in Roanoke.)

	sedan	station wagon	van	pickup truck
$D =$	<input style="width: 60px; height: 20px;" type="text"/>			
$S =$	<input style="width: 60px; height: 20px;" type="text"/>			
$M =$	<input style="width: 60px; height: 20px;" type="text"/>			

Additional Materials

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Show My Work(Optional)

Question 1 of 18

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