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# 1. Hidden matrix

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Problem Set A due Sep 15, 2021 20:30 IST



Practice

Matrix 1

1/1 point (graded)  
Suppose variables  $y_1, y_2$  depend on  $x_1, x_2$  as:

$$y_1 = -x_1 - 3x_2$$

(5.160)

$$y_2 = -7x_1$$

(5.161)

Find the matrix  $M$  such that  $\begin{pmatrix} y_1 \\ y_2 \end{pmatrix} = M \begin{pmatrix} x_1 \\ x_2 \end{pmatrix}$ .

(Enter a matrix using notation such as `[[a,b],[c,d]]` .)

$M =$

✔ Answer: `[[ -1, -3 ], [ -7, 0 ]]`

Solution:

We recognize  $y_1$  and  $y_2$  to be "a number times  $x_1$ " plus "a number times  $x_2$ ". These numbers make up the matrix.

Submit

You have used 1 of 3 attempts

ⓘ Answers are displayed within the problem

Matrix 2

1/1 point (graded)  
Suppose variables  $y_1, y_2, y_3$  depend on  $x_1, x_2, x_3$  as:

$$y_1 = -2x_1$$

(5.162)

$$y_2 = -7x_1 - 5x_2 - 7x_3$$

(5.163)

$$y_3 = -7x_1 + 6x_2 - 3x_3$$

(5.164)

Find the matrix  $M$  such that  $\begin{pmatrix} y_1 \\ y_2 \\ y_3 \end{pmatrix} = M \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix}$ .

(Enter a matrix using notation such as `[[a,b],[c,d]]` .)

$M =$

✔

Submit

You have used 1 of 3 attempts

✔ Correct (1/1 point)

1. Hidden matrix

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