

ALGEBRA II
Chapter 3 section 8
Use Inverse Matrices to Solve Linear Systems
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FOCUS:

How do you solve a system of two linear equations using inverse matrices?

VOCAB:

Identity Matrix: _____

Inverse Matrices: _____

Matrix of Variables: _____

Matrix of Constants: _____

WARM – UP:

Find the product.

$$\begin{bmatrix} -2 & 4 \\ 5 & -1 \end{bmatrix} \cdot \begin{bmatrix} 3 \\ 7 \end{bmatrix}$$

Solve the linear system.

$$\begin{aligned} -x - 4y &= -21 \\ 2x + y &= 0 \end{aligned}$$

NOTES:

Find the inverse of A. Then verify the result with your calculator.

$$\begin{bmatrix} 5 & -2 \\ 8 & -3 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 0 & -2 \\ 3 & 2 & 1 \\ -1 & 1 & 4 \end{bmatrix}$$

Solve.

$$\begin{bmatrix} 3 & -2 \\ -7 & 5 \end{bmatrix} X = \begin{bmatrix} -2 & 4 \\ 3 & -1 \end{bmatrix}$$

$$\begin{aligned} -2x + 3y &= -11 \\ 5x + y &= 19 \end{aligned}$$

At a video store, the cost of 3 DVDs, 2 video games, and 4 VHS movies is \$130. The cost of 2 DVDs, 1 video game, and 5 VHS movies is \$105. The cost of 3 DVDs, 3 video games, and 3 VHS movies is \$135. Find the cost of each item.

Let's see if you comprehended what we worked on in class...

Try _____ for homework