

HAT
Solving Systems with Inverse Matrices

9/13/17

WarmUp:

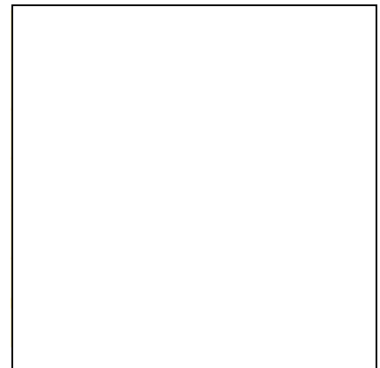
Find your assigned entry

$$\begin{bmatrix} \frac{2}{3} & -\frac{1}{3} & \frac{1}{3} \\ \frac{13}{18} & -\frac{11}{18} & -\frac{1}{18} \\ \frac{7}{18} & -\frac{1}{18} & -\frac{5}{18} \end{bmatrix} \cdot \begin{bmatrix} 3 & -2 & 4 \\ -4 & 1 & -5 \\ 5 & -3 & 3 \end{bmatrix} = \begin{bmatrix} \underline{1} & \underline{0} & \underline{0} \\ \underline{0} & \underline{1} & \underline{0} \\ \underline{0} & \underline{\neq 0} & \underline{1} \end{bmatrix}$$

$$\begin{aligned} &-\frac{2}{3}(3) + -\frac{1}{3}(-4) + \frac{1}{3}(5) \\ &-2 + \left(\frac{4}{3} + \frac{5}{3}\right) \\ &\quad + 3 \end{aligned}$$

These problems are from the 9/6/17 handout on
Solving Systems of Linear Equations.
At the time, we solved using ELIMINATION.

1) $3x - 2y + 4z = 35$
 $-4x + y - 5z = -36$
 $5x - 3y + 3z = 31$



$$\begin{aligned} 2) \quad & 4x - 3y + 6z = 18 \\ & -x + 5y + 4z = 48 \\ & 6x - 2y + 5z = 0 \end{aligned}$$

3)

$$-6x + 9y - 12z = 21$$

$$-2x + 3y - 4z = 7$$

$$10x - 15y + 20z = -30$$

4)

$$5x + 4y - 5z = -10$$

$$-4x - 10y - 8z = -16$$

$$6x + 15y + 12z = 24$$

5)

$$3v - 5w + 2x + 4y + z = 35$$

$$2v + 4w - x - 3y + 6z = -16$$

$$4v - 2w - 3x + y + 2z = 18$$

$$-5v + w + 4x - y - 3z = -18$$

$$-2v + 5w + 6x - 2y + z = -19$$

$$(4, -2, 1, 3, -1)$$

Calculator Competencies:

Enter a Matrix

Find an Inverse Matrix

Find a Determinant

Solve a System Using the Inverse Matrix

Homework: TI-Nspire Investigation

and....

- 3.1 Solving Systems of Equations
pg. 141 #17, 53
- 3.2 Solving Systems of Inequalities
pg. 150 #35, 41
- 3.3 Linear Programming
pg. 158 #28
- 3.4 Systems of Equation in Three Variables
pg. 165 #13, 16
- 3.5 Operations with Matrices
pg. 175 #33
- 3.6 Multiplying Matrices
pg. 184 #34
- 3.8 Solving Systems Using Inverse Matrices
pg. 198 #35

Chapter 3 TEST is Friday...
Look through these problems.
Got it... skip it.
Not sure... do it!