

Unit 3-5: Systems of equation in 3 variables  
Pg 167 - ordered triple  $(x, y, z)$

Ex #1:  $3x - 2y + 4z = 35$   
 $-4x + y - 5z = -36$   
 $5x - 3y + 3z = 31$

$A = \begin{bmatrix} 3 & -2 & 4 \\ -4 & 1 & -5 \\ 5 & -3 & 3 \end{bmatrix}$   $B = \begin{bmatrix} 35 \\ -36 \\ 31 \end{bmatrix}$   
 3 x 3 matrix      3 x 1 column  
 Rows      Columns

[2nd] [Matrix]      Needs - [Edit]  
 [1] [3] [A]      [Enter]

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

[2nd] [Matrix] → → Edit

[2nd] [Quit]  
 [2nd] [Matrix] [Enter]  
 [A]  $^{-1}$  \* [B] Enter

[1] [3] [A]      Enter  
 [2] [1] [B]      Enter  
 3 x 1  
 $\begin{bmatrix} 35 \\ -36 \\ 31 \end{bmatrix}$

$\begin{bmatrix} -1 \\ -5 \\ 7 \end{bmatrix}$        $x = -1$   
 $y = -5$   
 $z = 7$   
 (-1, -5, 7)  
 (x, y, z)

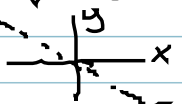
[A]  $^{-1}$  \* [B] Enter = Error (Inf. Many Soln / No Soln.)

Pg 171 #2)  $2x + y - 5z = -23$   
 $4x + 2y + 3z = 7$   
 $-2x - y - z = -3$

A  $\begin{bmatrix} 0 & 3 & -5 \\ 4 & 2 & 3 \\ -2 & -1 & -1 \end{bmatrix}$       B  $\begin{bmatrix} -23 \\ 7 \\ 3 \end{bmatrix}$   
 [A]  $^{-1}$  \* [B]

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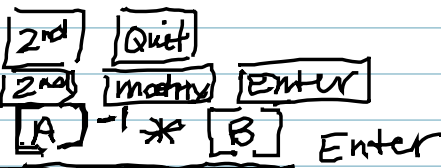
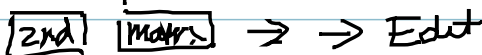
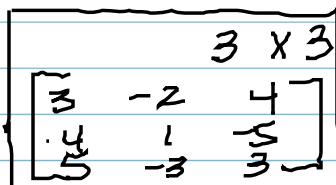
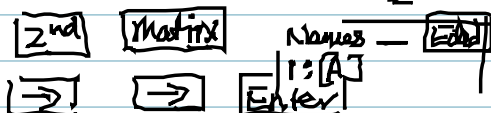


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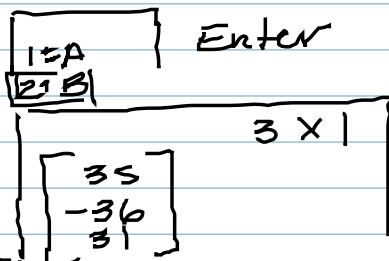
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3 x 3  
 rows columns

3 x 1  
 rows column



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 $y = -5$   
 $z = 7$   
 (-1, -5, 7)  
 (x, y, z)



$[A]^{-1} * [B]$  Enter = Error

(Inf. Many Soln / No Soln.)

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$A = \begin{bmatrix} 0 & 3 & -5 \\ 4 & 2 & 3 \\ -2 & -1 & -1 \end{bmatrix}$       $B = \begin{bmatrix} -23 \\ 7 \\ 3 \end{bmatrix}$

$[A]^{-1} * [B]$

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