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| .http://mathbits.com/MathBits/TISection/PreCalculus/logoPrecalculus.gif

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| **Working with Matrices** |

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| Matrices are rectangular arrays of elements.  The ***dimension*** of a matrix is the number of rows by the number of columns. |

 |
| **Adding/ Subracting Matrices** - matrices must be of the ***same dimension*** to be added/ subtracted.**Add:  http://mathbits.com/MathBits/TISection/PreCalculus/matric1.gif****First Enter the Matrices (one at a time):** |
| **Step 1:**  Go to **Matrix** (above the  **x-1**k key) http://mathbits.com/MathBits/TISection/PreCalculus/determ2.gif | **Step 2:**  Arrow to the right to**EDIT** to allow for entering the matrix.  http://mathbits.com/MathBits/TISection/PreCalculus/determ3.gif | **Step 3:**  Type in the dimensions (size) of your matrix and enter the elements (press **ENTER).**      http://mathbits.com/MathBits/TISection/PreCalculus/matric2.gif |
| **Step 4:**  Repeat this process forthe second matrix. http://mathbits.com/MathBits/TISection/PreCalculus/matric3.gif | **Step 5:** Arrow to the right to**EDIT** and choose a new name.  http://mathbits.com/MathBits/TISection/PreCalculus/matric4.gif | **Step 6:**  Type in the dimensions (size) of your matrix and enter the elements (press **ENTER).**    http://mathbits.com/MathBits/TISection/PreCalculus/matric5.gif |
| **Now, add:Step 7:** Return to the home screen. Go to **Matrix** to get the names of the matrices for adding.  http://mathbits.com/MathBits/TISection/PreCalculus/matric6.gif | **The answer to the addition, as seen on the calculator screen, is =**http://mathbits.com/MathBits/TISection/PreCalculus/matric7.gif |   |
|  **Multiplying Matrices** - for multiplication to occur, the ***dimensions*** of the matrices must be related in the following manner:  ***m x n*  times  *n x r*  yields *m x r*****Multiply: http://mathbits.com/MathBits/TISection/PreCalculus/matric8.gif****First Enter the Matrices (one at a time) as shown above:** |
| **Step 1:** Once the matrices are entered, you should see their dimensions in residence when you go to **Matrix**  (above the  **x-1**key) **http://mathbits.com/MathBits/TISection/PreCalculus/matric9.gif** | **Step 2:** Return to the homescreen.  Go to **Matrix** to get the names of the matrices for multiplying.  http://mathbits.com/MathBits/TISection/PreCalculus/matric10.gif | **The product, as seen on the calculator screen, is =****http://mathbits.com/MathBits/TISection/PreCalculus/matric11.gif** |

 **Using Matrices to Solve Systems of Equations:** *(using Gauss-Jordan elimination method with reduced row echelon form )*Solve this system of equations:

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| 2*x* - 3*y* + *z* = -54*x* -  *y* - 2*z* = -7-*x* + 2*z* = -1  |

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| --- | --- | --- |
| **Step 1:**  Line up the variables and constants     2*x* - 3*y*  + *z* = -5     4*x* -  *y*  - 2*z* = -7     -*x* +0y + 2*z* = -1 | **Step 2:**  Write as an augmentedmatrix and enter into calculator. (3 x 4 matrix)       http://mathbits.com/MathBits/TISection/PreCalculus/matric20.gif | **Step 3:**  From the home screen, choose the **rref** function.  [Go to **Matrix**  (above the  **x-1**key), moveright→**MATH,** choose **B: rref]**  http://mathbits.com/MathBits/TISection/PreCalculus/matric21.gif |
| **Step 4:**  Choose name of matrixand hit **ENTER**. http://mathbits.com/MathBits/TISection/PreCalculus/matric22.gif | **Step 5:  The answer to the system, will be the last column on the calculator screen:*****x* = -3*y* = -1*z* = -2.** |   |

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Adding/ Subtracting Matrices using Graphing Calculator

1)

 

2)

 

Multiplying Matrices using Graphing Calculator

3)



4)



Solving systems of Equation using Graphing Calculator

5)



6)



Pre Calculus TABLE #\_\_\_\_\_\_\_\_

Lesson 8 Graphing Calculator Activity PERIOD \_\_\_\_\_\_\_\_

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| --- |
| Adding/ Subtracting Matrices using Graphing Calculator1) 2) |
| Multiplying Matrices using Graphing Calculator3) 4) |
| Solving Systems of Equations using Graphing Calculator5) 6) |