CH.10 MATRICES → GETTING STARTED WITH A TI83 or TI84 CALCULATOR:

*Clear your screen, then push 2nd MATRIX.

*Push the ▶right arrow key twice to highlight EDIT. Use ▲ ▼up/down arrows to highlight the name of your matrix. Press ENTER.

*Enter the dimensions of your matrix, then enter your values for each element. (Push enter after each input. The cursor will automatically move to the next space.)

*Once all elements are entered, push 2nd QUIT to finalize your entry.

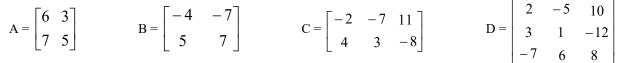
*Repeat the process to input the other matrices.

*To solve #1-17, push 2^{nd} MATRIX, then NAME \rightarrow now choose proper matrices

*Hint: use the **x**⁻¹ **button** when finding the inverse

OR get started using the Desmos online calculator: https://www.desmos.com/matrix

Enter the following values into your calculator:



Use calculator commands to solve for the following: (Write given notation and each answer on a separate sheet of paper.)

1. A + B	10. A^{-1} (Express your answer with fractions using the MATH button on far left 1: \blacktriangleright Frac)
2. B – A	11. D ⁻¹ (Express your answer with fractions)
3. BA	12. DD^{-1}
4. AB	13. A ⁻¹ A
5. BC	14. BB ⁻¹
6. AC	15. detA (determinant can be found using the matrix menu and highlighting "math" at the top)
7. CD	16. det D
8. B ²	17. Write a matrix equation , then solve for (x, y, z) using your calculator.
9. A ²	-x - 2y + 9z = 13
	2x + y - 2z = 11 Be sure to use proper notation. On your paper, please
	x - 3z = 7 write the command that you are using in the calculator.

IMPORTANT!!!! SOLVE 10.3 #30-38even,58,60 WITH A CALCULATOR → <u>write matrix</u> <u>equation, write calculator command, and then solve using matrices.</u> DON'T SHOW ALL OF YOUR WORK ALGEBRAICALLY LIKE YOU DID PREVIOUSLY IN 10.2!

CHECK YOUR ANSWERS: worksheet #1-17 AND 10.3 #30-38even, 58,60

$$\begin{bmatrix} -73 & -47 \\ 79 & 50 \end{bmatrix} \begin{bmatrix} -9 & -21 \\ -3 & -14 \end{bmatrix} \begin{bmatrix} 2 & -4 \\ 12 & 12 \end{bmatrix} \begin{bmatrix} 57 & 33 \\ 77 & 46 \end{bmatrix} \begin{bmatrix} -10 & -10 \\ -2 & 2 \end{bmatrix} \begin{bmatrix} 0 & -33 & 42 \\ 6 & -34 & 37 \end{bmatrix} \begin{bmatrix} -19 & -21 \\ 15 & 14 \end{bmatrix} \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$
$$\begin{bmatrix} -20 & 7 & 12 \\ 18 & -14 & -1 \end{bmatrix} \begin{bmatrix} -102 & 69 & 152 \\ 73 & -65 & -60 \end{bmatrix} \begin{bmatrix} \frac{8}{11} & \frac{10}{11} & \frac{5}{11} \\ \frac{6}{11} & \frac{43}{55} & \frac{27}{55} \\ \frac{5}{22} & \frac{23}{110} & \frac{17}{110} \end{bmatrix} \begin{bmatrix} \frac{5}{9} & -\frac{1}{3} \\ -\frac{79} & \frac{2}{3} \end{bmatrix} \begin{bmatrix} -1 & -2 & 9 \\ 2 & 1 & -2 \\ 1 & 0 & -3 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 13 \\ 11 \\ 7 \end{bmatrix} \quad A^{-1} \cdot B = \begin{bmatrix} z \\ -1 \\ -2 \end{bmatrix}$$
matrix equation command, \uparrow solution

To clear matrices: 2nd MEM (above + symbol) 2: Mem Mgmt / Del 5: Matrix push delete to clear the matrix next to the arrow