

$$C = \begin{bmatrix} 12 & 6 \\ -8 & 24 \\ 2 & -5 \end{bmatrix} \quad D = \begin{bmatrix} -4 & 6 & -7 \\ 1 & -10 & 5 \end{bmatrix}$$

$$E = \begin{bmatrix} \frac{1}{2} & 5 & -8 \\ -1 & 9 & 6 \\ 7 & -1 & 4 \end{bmatrix} \quad F = \begin{bmatrix} -4 & 5 \\ 10 & -6 \\ 3 & 0 \end{bmatrix}$$

Evaluate (if possible):

1) $3C + 2D^T$

2) E^{-1}

3) $F \times D$

4) $E \times C^T$

5) Find the determinant of E.

*0 3 1
3 0 0
1 4 1*
3rd row
1st column

Identify a_{31} in $\begin{bmatrix} -13 & -20 & -17 & 4 \\ -21 & 5 & -6 & 27 \\ 10 & 20 & 21 & 14 \end{bmatrix}$

- A. 31
C. 10

- B. -17
D. -6

6. What are the dimensions of $\begin{bmatrix} 19 & 16 & 13 & -11 & 20 \\ -9 & -5 & -10 & -18 & 15 \\ 14 & 7 & 2 & 1 & 17 \end{bmatrix}$?

- A. 5×3
C. 4×5

- B. 3×5
D. 5×4

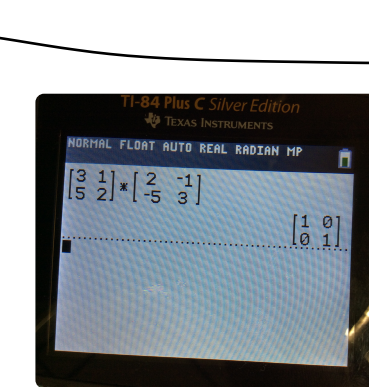
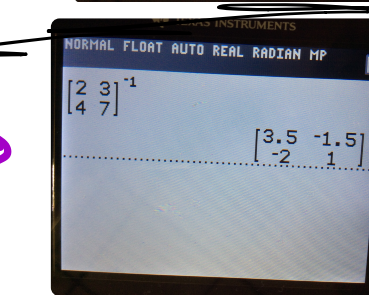
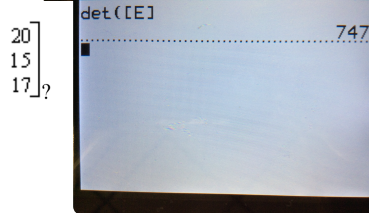
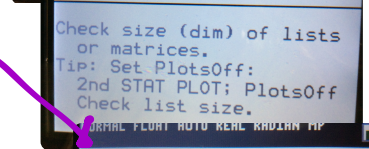
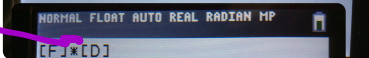
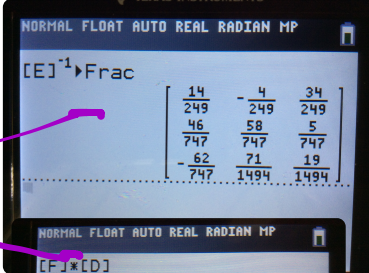
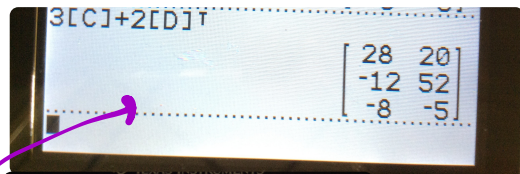
$$X = \begin{bmatrix} 2 & 3 \\ 4 & 7 \end{bmatrix} ?$$

8. Find the inverse of matrix X.

Ex) $A = \begin{bmatrix} 3 & 1 \\ 5 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & -1 \\ -5 & 3 \end{bmatrix}$

9. Is B the inverse of matrix A?

Yes b/c you get the identity matrix



Solve for x and/or y:

$$\textcircled{10} \begin{bmatrix} -3 & 5 \\ 25 & -2 \end{bmatrix} - 3 \begin{bmatrix} 0 & -2 \\ x & 4 \end{bmatrix} = \begin{bmatrix} -3 & 11 \\ 15 & -14 \end{bmatrix}$$

$$\textcircled{11} \begin{bmatrix} 5 & 6 \\ 10 & -7 \\ 8 & x \\ 1 & -6 \\ 7 & 8 \end{bmatrix} + 4 \begin{bmatrix} 0 & 1 \\ 1 & -2 \\ 2 & 3 \\ 4 & 11 \\ -5 & 3 \end{bmatrix} = 2 \begin{bmatrix} 12.5 & -13 \\ -23 & 13.5 \\ -16 & 100 \\ y & 37 \\ -27.5 & -14 \end{bmatrix}$$

$$\begin{array}{r} 25 - 3x = 15 \\ -25 \qquad \qquad -25 \\ \hline -3x = -10 \end{array}$$

$$x = 10/3$$

$$\begin{array}{r} -5x + 4(3) = 2(100) \\ -5x + 12 = 200 \\ -5x = 188 \\ x = -37.6 \end{array}$$

$$\begin{array}{r} -5(1) + 4(4) = 2y \\ -5 + 16 = 2y \\ 11 = 2y \\ y = 5.5 \end{array}$$

$$13 \begin{bmatrix} 4 & 1 & 3 \\ -2 & x & 1 \end{bmatrix} \begin{bmatrix} 9 & -2 \\ 2 & 1 \\ -1 & 1 \end{bmatrix} = \begin{bmatrix} y & -4 \\ -13 & 8 \end{bmatrix}$$

2nd row 1st column

$$\begin{array}{r} -2(9) + x(2) + 1(-1) = -13 \\ -18 + 2x - 1 = -13 \\ 2x - 19 = -13 \\ \qquad +19 \qquad +19 \\ \hline 2x = 6 \\ x = 3 \end{array}$$

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$$13 \quad \begin{bmatrix} 4 & 1 & 3 \\ -2 & x & 1 \end{bmatrix} \begin{bmatrix} 9 & -2 \\ 2 & 1 \\ -1 & 1 \end{bmatrix} = \begin{bmatrix} y & -4 \\ -13 & 8 \end{bmatrix}$$

1st row 1st column

$$4(9) + 1(2) + 3(-1) = y$$

$$36 + 2 - 3 = y$$

$$35 = y$$