GSE PreCalculus
Test 1 Review— Matrices

Name _____

Use the following matrices for problems 1-10

$$D=\begin{bmatrix} -2 & 5 \\ 9 & -11 \\ 4 & -7 \end{bmatrix} \quad E=\begin{bmatrix} 8 & -4 & 2 \\ 3 & 1 & -5 \end{bmatrix} \quad F=\begin{bmatrix} 3 & 5 \\ -1 & 8 \end{bmatrix} \quad G=\begin{bmatrix} -1 & 3 \\ -1 & 2 \end{bmatrix}$$

1. 3D
2. 3F + 4G
3. 2F – 4E
4. $|F|$
5. $|E|$

6. D^{-1}
7. F^{-1}
8. DE
9. EG
10. FF^{-1}

11. Find the determinant of: $\begin{bmatrix} 4 & 2 \\ 2 & 1 \end{bmatrix}$

12. Solve for x and y: $\begin{bmatrix} 2 & 3y \\ -1 & 10 \end{bmatrix} + \begin{bmatrix} -5 & 4 \\ 5 & -2 \end{bmatrix} = \begin{bmatrix} -3 & 19 \\ 4 & x \end{bmatrix}$

13. The dimensions of Matrix A are 2 x 4 and the dimensions of Matrix C are 2 x 3. If A * B = C, then what are the dimensions of Matrix B?

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14. Solve for x: $\begin{vmatrix} x & -2 \\ 6 & x \end{vmatrix} = -8x$

15. Solve for Matrix X: $\begin{bmatrix} -1 & 1 \\ 5 & -2 \end{bmatrix}[X] = \begin{bmatrix} 4 \\ -7 \end{bmatrix}$

16. Solve for x, y, and w: $3\begin{bmatrix} -2x & 2 \\ -5y & 3w \end{bmatrix} = \begin{bmatrix} 18 & 6 \\ -30 & -9x \end{bmatrix}$

17. Write as a system of linear equations: $\begin{bmatrix} 1 & -2 \\ 7 & -3 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 8 \\ -5 \end{bmatrix}$

18. Solve: $2x + 3y = 4$
$6y = 5x + 5$

19. Solve: $9x + 7y = -30$
$8y + 5z = 11$
$-3x + 10z = 73$

20. A Greek deli sells small and jumbo gyros. A small gyro costs $3.50 and a jumbo gyro costs $5.25. At lunch one day they sold 25 gyros for a total of $127.75. How many of each type of gyro did they sell?