Algebra II B

Chapter 11.1-11.3 Practice Quiz

Name_____

Give the dimensions of the matrix.

1. $\begin{bmatrix} 1 & 2 & -5 \\ 0 & 1 & 3 \end{bmatrix}$ _____

2. $\begin{bmatrix} 1 & 0 & 8 & 0 \\ 0 & 1 & 5 & -1 \\ 0 & 0 & 0 & 0 \end{bmatrix}$ _____

3. $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix}$ _____

Use the following matrices to perform the indicated operation, or explain why it cannot be done. (No Calculator!)

$A = \begin{bmatrix} 2 & 0 & -1 \end{bmatrix}$ $B = \begin{bmatrix} 1 & 2 & 4 \\ -2 & 1 & 0 \end{bmatrix}$ $C = \begin{bmatrix} 0 & 3 \\ 2 & -1 \\ -2 & 1 \end{bmatrix}$ $D = \begin{bmatrix} 1 & 4 \\ 0 & -1 \\ 2 & 0 \end{bmatrix}$ $E = \begin{bmatrix} 2 & -1 \\ -5 & 6 \end{bmatrix}$ $F = \begin{bmatrix} 4 & 0 & 2 \\ -1 & 1 & 0 \\ 7 & 5 & 0 \end{bmatrix}$ $G = \begin{bmatrix} 4 & -3 \\ 2 & 0 \end{bmatrix}$

4. D+C

5. 2E

6. C - 4D

$A = \begin{bmatrix} 2 & 0 & -1 \end{bmatrix}$ $B = \begin{bmatrix} 1 & 2 & 4 \\ -2 & 1 & 0 \end{bmatrix}$ $C = \begin{bmatrix} 0 & 3 \\ 2 & -1 \\ -2 & 1 \end{bmatrix}$ $D = \begin{bmatrix} 1 & 4 \\ 0 & -1 \\ 2 & 0 \end{bmatrix}$ $E = \begin{bmatrix} 2 & -1 \\ -5 & 6 \end{bmatrix}$ $F = \begin{bmatrix} 4 & 0 & 2 \\ -1 & 1 & 0 \\ 7 & 5 & 0 \end{bmatrix}$ $G = \begin{bmatrix} 4 & -3 \\ 2 & 0 \end{bmatrix}$

7. 5E – 2B

8. AB

9. EG

10. BC

11. EF

12. AC

<u>Find the inverse, if it exists.</u> Use the formula $A^{-1} = \frac{1}{ad-bc}\begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$

13. $E = \begin{bmatrix} 2 & -1 \\ -5 & 6 \end{bmatrix}$

14. $E = \begin{bmatrix} 2 & -4 \\ -3 & 6 \end{bmatrix}$

Use the rule $X = A^{-1} \cdot B$**, (where A is the coefficient matrix, X is the variable matrix and B is the known matrix**), to <u>solve the following systems of equations</u>.

15. $\begin{aligned} -4x + 8y &= 24 \\ -x - 3y &= -9 \end{aligned}$

16. **You attend a movie with a group of people. Each adult ticket cost $15, and each childs ticket costs $10. There are 15 people in your group, and the price of the tickets is $175. How many adults and children are in your group?**

Set up a system of equations and use matrices to solve.

17. **If the dimensions of** $Matrix\ A\ is\ 4x3$ **and the dimensions of** $Matrix\ B\ is\ 3x7$**, then the dimensions of** $A \cdot B$ **is:**

A. 3x3 **B. 4x3** **C. 4x7** **D. impossible**