Name_____

Date_____

Advanced Algebra

Unit 6: Finding the Inverse of a 2 by 2 Matrix

Unit 6 Assignment #12

You will use this assignment to complete the next assignment #6

Find the inverse of the following matricies. Matrix $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ will be your inverse matrix.

We know that $[A]^{-1} * [A]$ is the equivalent to 1 in a 2 by 2 matrix. Just like we know $\frac{1}{6}*6=1$

You need to set up the system of equations to solve these matricies. This involves the skill of

A) Multiplying matricies
B) Solving a 2 by 2 system with the skill of elimination.

1) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 3 & -9 \\ -1 & 4 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

2) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 1 & -2 \\ 2 & 1 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

3) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 3 & 2 \\ 5 & -4 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

4) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 3 & 2 \\ 9 & -5 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

5) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 5 & -4 \\ 1 & 3 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

6) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 4 & -3 \\ 7 & 12 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

7) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 3 & 4 \\ -2 & 3 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

8) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 5 & -2 \\ 4 & 3 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

9) $\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} 7 & 2 \\ 3 & -5 \end{bmatrix}=\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$