

Name _____

Date _____

Advanced Algebra

Unit 6: I can solve a Matrix to System. Assignment#6

You should use your answers from Assignment # 5

This goes with Matrix Assignment #5

$$[A]^{-1} * [A] * \begin{bmatrix} a & b \\ c & d \end{bmatrix} = [A]^{-1} * [B]$$

$$\text{Therefore } \begin{bmatrix} a & b \\ c & d \end{bmatrix} = [A]^{-1} * [B]$$

So the KEY point to solving a matrix system is I need to know the Inverse Matrix. Then I am multiplying the inverse on both sides. The result is then getting the variable matrix by itself and multiplying two matrices on the other side. The result is the answer to the system.

$$1) \begin{bmatrix} 3 & -9 \\ -1 & 4 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} 24 & -78 \\ -10 & 36 \end{bmatrix}$$

$$2) \begin{bmatrix} 1 & -2 \\ 2 & 1 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} -8 & 4 \\ -1 & 13 \end{bmatrix}$$

$$3) \begin{bmatrix} 3 & 2 \\ 5 & -4 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} 24 & 70 \\ -70 & -30 \end{bmatrix}$$

$$4) \begin{bmatrix} 3 & 2 \\ 9 & -5 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} -1 & 4 \\ -47 & -43 \end{bmatrix}$$

$$5) \begin{bmatrix} 5 & -4 \\ 1 & 3 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} 5 & 30 \\ -18 & -32 \end{bmatrix}$$

$$6) \begin{bmatrix} 4 & -3 \\ 7 & 12 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} -5 & -4 \\ 43 & 62 \end{bmatrix}$$

$$7) \begin{bmatrix} 3 & 4 \\ -2 & 3 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} -27 & 58 \\ 40 & 18 \end{bmatrix}$$

$$8) \begin{bmatrix} 5 & -2 \\ 4 & 3 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} 4 & 52 \\ -6 & 36 \end{bmatrix}$$

$$9) \begin{bmatrix} 7 & 2 \\ 3 & -5 \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} 13 & 22 \\ -12 & -14 \end{bmatrix}$$

