## **HAT**

**Inverse Matrices** 

9/12/17

## Warm Up:

- 4. Consider the matrices  $A = \begin{bmatrix} 1 & -2 \\ 3 & 2 \end{bmatrix}$  and  $B = \begin{bmatrix} 4 & 4 \\ 2 & 3 \end{bmatrix}$ 
  - a. Find the product. Show your work.
  - b. Find a matrix C such that  $B + C = \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$ .

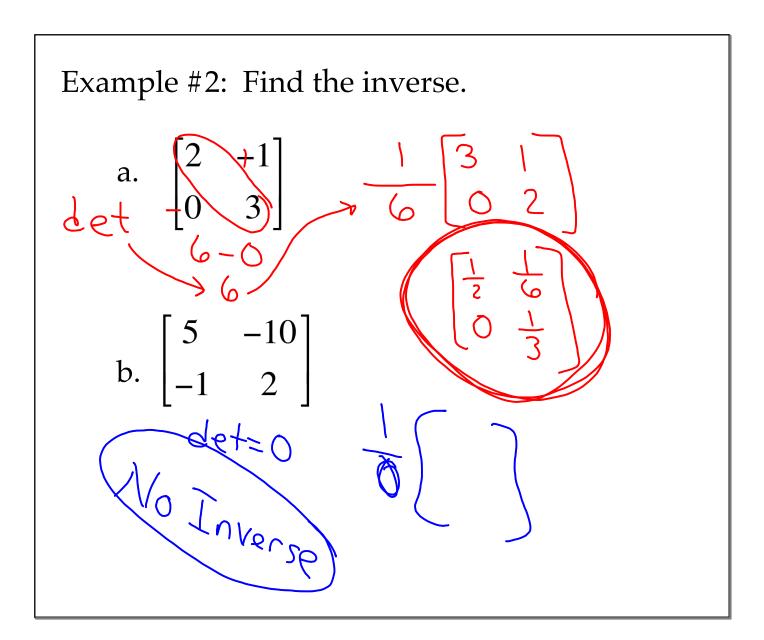
Example #1

a. Determine whether 
$$X = \begin{bmatrix} 3 & -2 \\ -1 & 1 \end{bmatrix}$$
 and

Y-Z
$$Y = \begin{bmatrix} 1 & 2 \\ -1 & 3 \end{bmatrix}$$
 are inverses of each other.

b. Determine whether 
$$P = \begin{bmatrix} 3 & -1 \\ 4 & -2 \end{bmatrix}$$
 and

$$Q = \begin{bmatrix} 1 & -3 \\ 2 & 4 \end{bmatrix}$$
 are inverses of each other.



Example #3: Solve the system using the matrix method.

$$\begin{cases}
4x - 5y = 28 \\
9x + 7y = -10
\end{cases}$$

$$\begin{cases}
4x - 5y = 28 \\
9x + 7y = -10
\end{cases}$$

$$\begin{cases}
4 - 5 \cdot x = 28 \\
9x + 7y = -10
\end{cases}$$

$$\begin{cases}
4 - 5 \cdot x = 28 \\
4 - 7 \cdot x = 28
\end{cases}$$

$$\begin{cases}
4 - 5 \cdot x = 28 \\
7 - 73 \cdot 73 = -10
\end{cases}$$

$$\begin{cases}
7 - 73 \cdot 73 = 73 \cdot 73 = -10
\end{cases}$$

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Homework: pg. 202 #8, 21, 26, 31, 36

