



Lecture notes for Math 11

10/24/11

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$$\begin{array}{|c|c|} \hline 3 & 4 \\ \hline 1 & 6 \\ \hline \end{array}$$

$$\begin{aligned} 3 \times 6 &= 18 \\ 18 - 4 &= \textcircled{14} \end{aligned}$$

$$\begin{array}{|c|c|} \hline 3 & 4 \\ \hline 1 & 6 \\ \hline \end{array} \quad \begin{array}{l} \text{L SEZ:} \\ 3 \cdot 6 - 4 \cdot 1 \\ = 14 \end{array}$$

YAY!

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$$\begin{bmatrix} 3 & 1 & 6 \\ 2 & 4 & 8 \end{bmatrix} \begin{bmatrix} 2 & 4 \\ 1 & 0 \end{bmatrix}$$

LEO SEZ:  
 $2 \times 3 \times 2 \times 2$   
 MIDDLE #S DON'T  
 MATCH. ERGO

Not Possible

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$$\begin{bmatrix} 1 & 0 \\ -1 & 1 \end{bmatrix} \begin{bmatrix} 2 & -1 & 0 \\ 1 & 0 & -1 \end{bmatrix}$$

$$\begin{array}{ccc} 2+0 & -1+0 & 0+0 \\ -2+1 & 2+0 & 0+1 \end{array}$$

$$\begin{bmatrix} 2 & 1 & 0 \\ -1 & 2 & -1 \end{bmatrix}$$

LEO SEZ:  
 SO CLOSE!

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$$-\frac{3}{4} \begin{bmatrix} 2 & 1 & 6 \\ 4 & 8 & -10 \end{bmatrix}$$

LEO SEZ:  
SCALAR MULT.  
JUST MULTIPLY EACH  
TERM BY  $-\frac{3}{4}$

$$\begin{bmatrix} -1.5 & -0.75 & -4.5 \\ -3 & -6 & 7.5 \end{bmatrix}$$

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$$\begin{bmatrix} 2 & 1 \\ 4 & 3 \end{bmatrix} - \begin{bmatrix} 3 & 0 \\ 4 & -2 \end{bmatrix}$$

LEO SEZ:  
SUBTRACT, YO!

$$\begin{bmatrix} -1 & 1 \\ 0 & 5 \end{bmatrix}$$

$$\begin{bmatrix} 2-3 & 1-0 \\ 4-4 & 3-(-2) \end{bmatrix}$$

$$= \begin{bmatrix} -1 & 1 \\ 0 & 5 \end{bmatrix}$$

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$$\begin{bmatrix} 2 & 1 & 6 \\ 4 & 3 & 8 \end{bmatrix} + \begin{bmatrix} 3 & 1 \\ 4 & 2 \end{bmatrix}$$

LEO SEZ:

TO ADD OR SUB.

Not Possible

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$$\begin{bmatrix} 1 \\ 3 \end{bmatrix} \begin{bmatrix} 2 & 4 \end{bmatrix}$$

2x1 1x2

LEO SEZ:

$$\begin{bmatrix} 2 \cdot 1 & 4 \cdot 1 \\ 2 \cdot 3 & 4 \cdot 3 \end{bmatrix}$$

$$\begin{bmatrix} 2 & 4 \\ 6 & 12 \end{bmatrix}$$

$$\begin{bmatrix} 2 & 12 \end{bmatrix}$$

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