#ret #hw

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1 | **Solving Systems**

Read 1.B! Have questions. Try a couple exercises. notes: KBxChapter1B

Also, keep thinking about the group work questions from today:

- **What is the relationship between cross product and the magnitude of a vector?**
  - Which vector? Assuming resultant vector, $||a||b|sin(\theta)|$ would be the magnitude
- **How does cosine relate to dot product? Can you prove it? (HINT: think about the previous problem and the Law of Cosines.)**
  - $a \cdot b = |a||b|cos(\theta)$
  - [abcosthetaproof.pdf]
- *Do your best to solve the following matrix equation using matrix multiplications that correspond to row operations for systems, specifically multiplying a row by a scalar, adding two rows, and swapping the order of rows. You'll have to think about how to do these things with matrices! It may help to keep in mind what a SOLVED matrix equation looks like (in particular, what does the 3x3 matrix of coefficients look like?).*

$ $\begin{bmatrix} 1 & -1 & 1 \\ 0 & 2 & 1 \\ 2 & 1 & -2 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} -2 \\ 3 \\ 2 \end{bmatrix}$ $

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