Group Debrief 1

Learning Goal 1: apply elementary row operations to transform a matrix into its row echelon form via strict Gaussian

1. What are significant take aways of this learning outcome?
2. Also reflect on personal connections, experiences and/or any remaining questions you have.
3. Prepare to share from your group's discussion with the class.

Each group member takes a turn for each learning outcome.

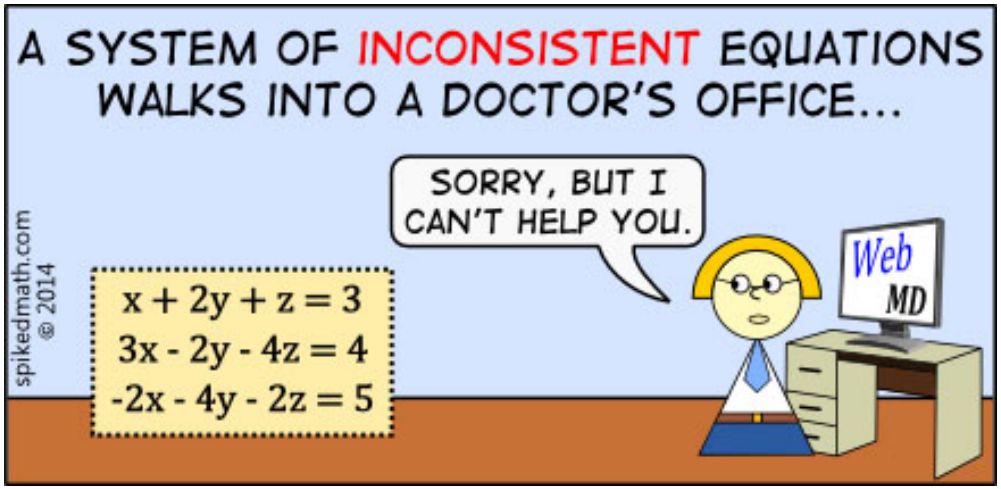
Try to help each other as material in this class builds upon itself.

https://www.etsy.com/listing/506994463/math-pun-coffee-mug-funny-joke-mug-funny

Learning Goal 2: determine solutions to linear systems by hand and in Maple or classify them as inconsistent

1. What are significant take aways of this learning outcome?
2. Also reflect on personal connections, experiences and/or any remaining questions you have.
3. Prepare to share from your group's discussion with the class.

Each group member takes a turn for each learning outcome.
Try to help each other as material in this class builds upon itself.



Mike, *spikedmath.com*, 2014

Learning Goal 3: analyze systems algebraically and geometrically including any parametric solutions

1. What are significant take aways of this learning outcome?
2. Also reflect on personal connections, experiences and/or any remaining questions you have.
3. Prepare to share from your group's discussion with the class.

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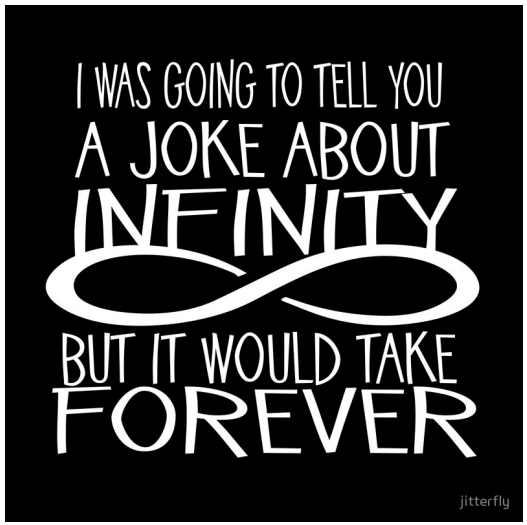
Try to help each other as material in this class builds upon itself.



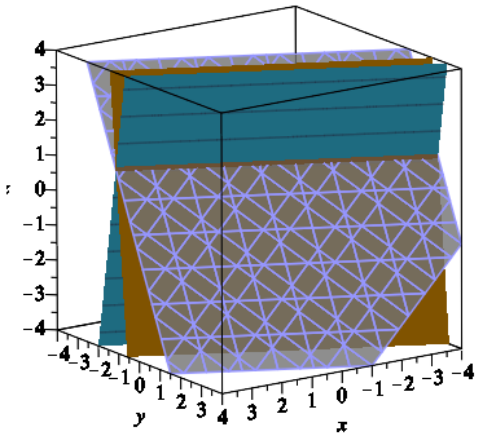


Image Credit: jitterfly

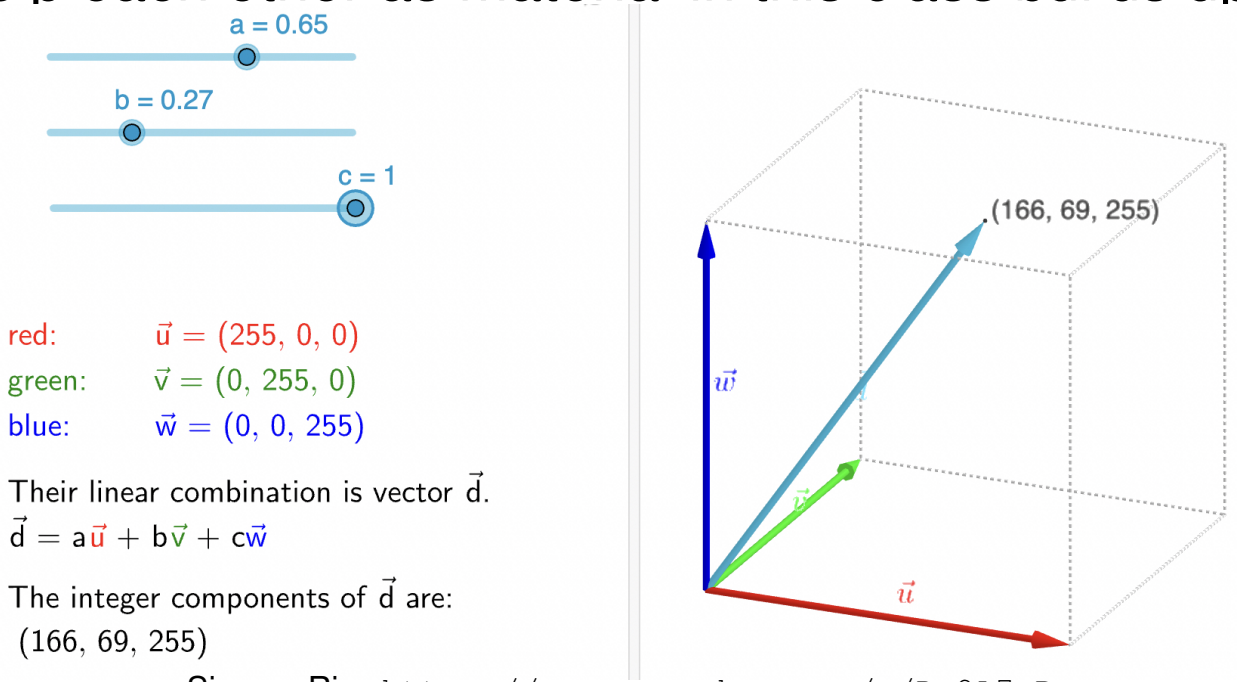
https://www.redbubble.com/people/jitterfly/works/26106035?p=canvas-print&rel=carousel

Learning Goal 4: compute sums, multiples and linear combinations of vectors, and matrix vector products

1. What are significant take aways of this learning outcome?
2. Also reflect on personal connections, experiences and/or any remaining questions you have.
3. Prepare to share from your group's discussion with the class.

Each group member takes a turn for each learning outcome.

Try to help each other as material in this class builds upon itself.



Simona Riva https://www.geogebra.org/m/Dq2A7aRv

Learning Goal 5: determine if a set of vectors is linearly independent

1. What are significant take aways of this learning outcome?
2. Also reflect on personal connections, experiences and/or any remaining questions you have.
3. Prepare to share from your group's discussion with the class.

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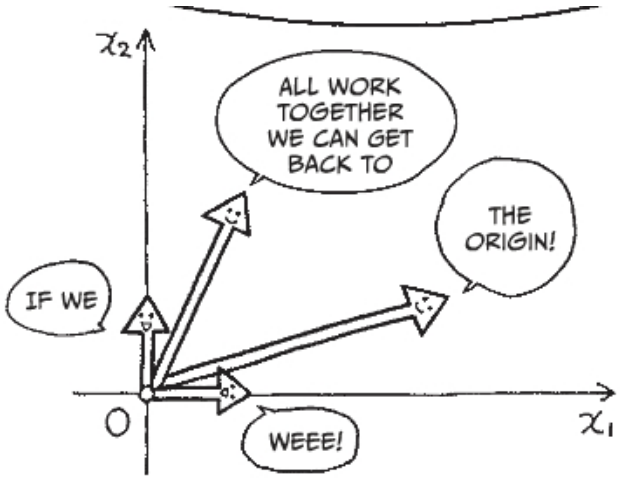

LINEAR DEPENDENCE

The Manga Guide to Linear Algebra by Iroha Inoue and Shin Takahashi

Learning Goal 6: analyze linear combinations and the span of a set of vectors algebraically and geometrically

1. What are significant take aways of this learning outcome?
2. Also reflect on personal connections, experiences and/or any remaining questions you have.
3. Prepare to share from your group's discussion with the class.

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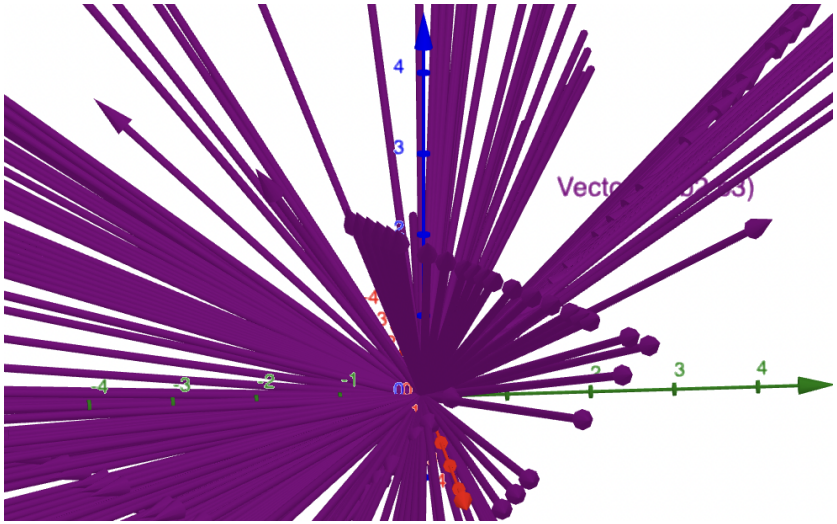
Try to help each other as material in this class builds upon itself.



Learning Goal 7: link matrix equations, vector equations, and systems of equations

1. What are significant take aways of this learning outcome?
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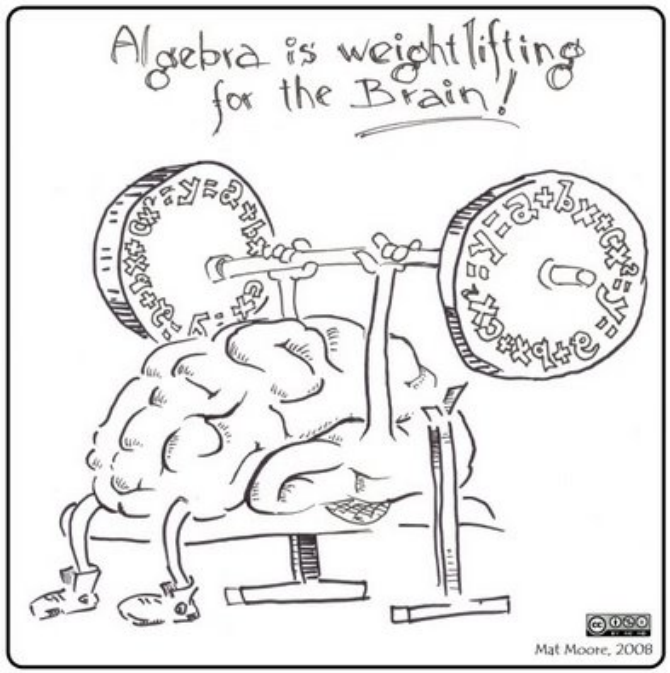
3. Prepare to share from your group's discussion with the class.

Each group member takes a turn for each learning outcome.

Try to help each other as material in this class builds upon itself.



Mat Moore, 2008

Learning Goal 8: link algebra and geometry of the above, explore applications, and interpret statements

1. What are significant take aways of this learning outcome?
2. Also reflect on personal connections, experiences and/or any remaining questions you have.
3. Prepare to share from your group's discussion with the class.

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From Problem Set 1: Skim 1.6 or other parts of the book or search the internet for a real-life application we haven't yet covered related to one or more of the following topics: system of linear equations, vectors, matrix equations, linear combinations, or span.

Module 1 and 2 Overview

- Linear Systems of Matrix and Vector Equations
  - 1.1, 1.2 & 1.5: Gaussian elimination, algebra and geometry of solutions of systems of equations
  - 1.4: connects all via multiplying a matrix and a vector
  - 1.3 and 1.7: algebra and geometry of column vectors (linear combinations/mixing, span, linear independence)

  problem set 1
- Matrix Algebra and Spaces
  - 2.1 and 2.2 : matrix algebra: $A + B$, cA, A^T, AB, $A^{-1}_{2\times 2}$, $\det(A_{2\times 2})$ [extends 1.3 and 1.4]
  - 2.3: theorem 8: what makes a matrix invertible [connects 2.2 to 1.1, 1.2, 1.3 and 1.7] and condition number
  - 2.8 and 2.9: subspace, basis, column space and null space and their dimensions [connects spaces to 1.3, 1.5 and 1.7]

  problem set 2

  in-class assessment 1