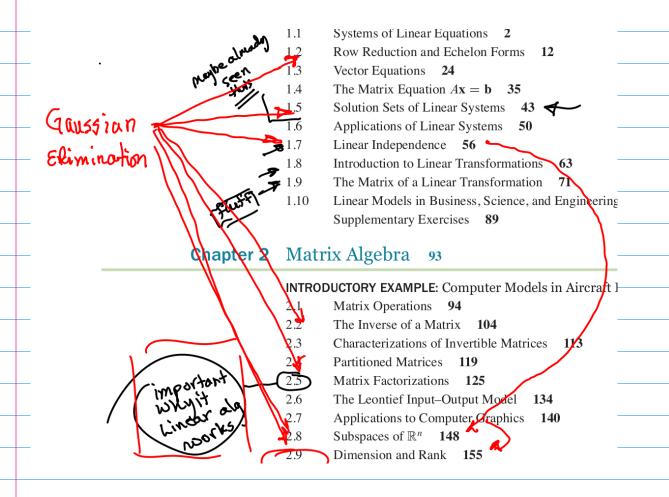
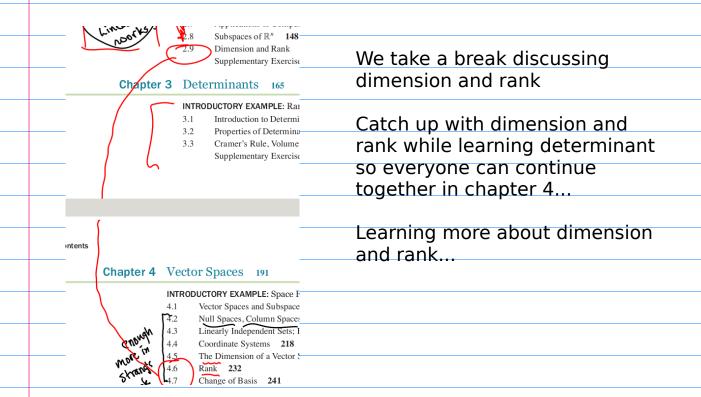
Gaussian Elimination plays a big role in the first chapters...



Spiral method of teaching mathematics...keep switching back and forth between topics to give people a chance to catch up...



Chapter 5 Eigenvalues and Eigenvector



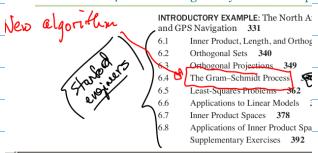
INTRODUCTORY EXAMPLE: Dynamical S

- .1 Eigenvectors and Eigenvalues 2
- .2 The Characteristic Equation 276
- 5.3 Diagonalization 283
- 4 Eigenvectors and Linear Transform
- Complex Eigenvalues 297
 Discrete Dynamical Systems 30
- 5.7 Applications to Differential Equat-
- .8 Iterative Estimates for Eigenvalue Supplementary Exercises 328

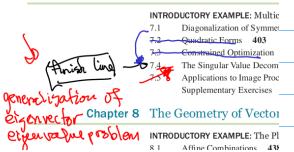
Same thing happens here..

Take a break from the eigenvalue eigenvector problem to discuss Gram-Schmidt and least squares...

Chapter 6 Orthogonality and Least Squ



Chapter 7 Symmetric Matrices and

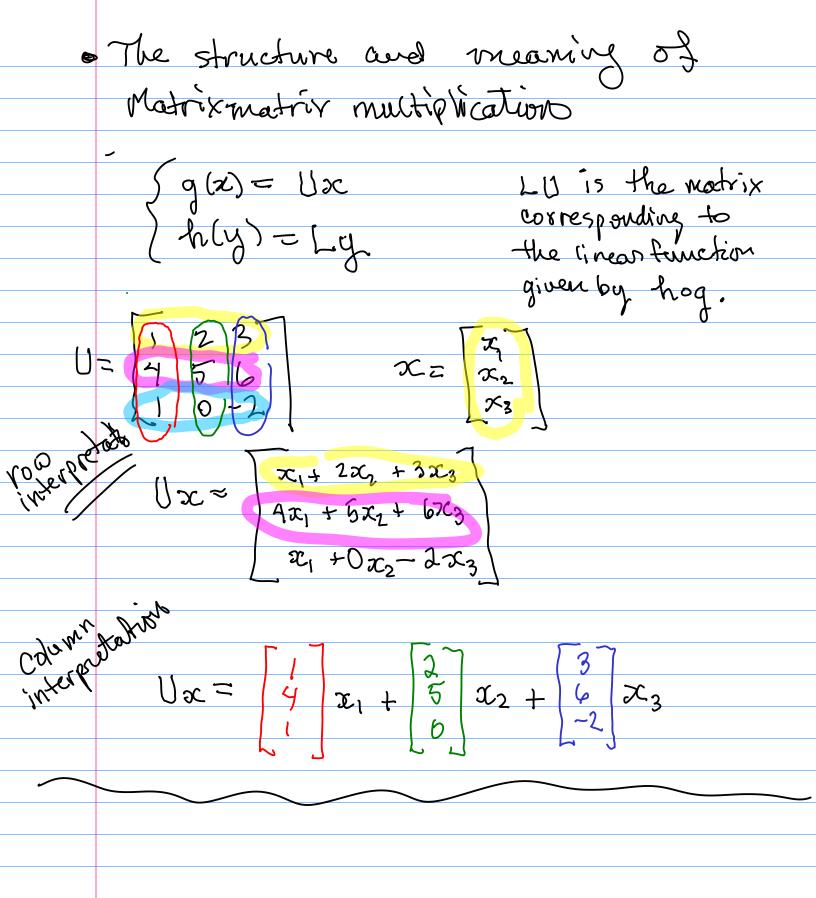


This gives people time to catch up with the eigenvalue and eigenvectors before Chapter 7 which generalizes the eigenvalue eigenvector problem...to create the singular value decomposition...

While the spiral method at first looks like someone threw the pages for the book down the stairs and then put them back together in a random order...

The advertising claims that it allows those who fall behind time to catch up while other topics are being discussed while at the same time providing something new each time for people who keep pace with the course...

I'd prefer to cover one topic in depth before going on to the next topic... In either case, the thing to remember is that techniques get used again and again once learned, so it's never useful to forget a topic once the chapter is done...



Matrix - Matrix Mult

$$A = \begin{bmatrix} 1 & 0 & 2 & 7 \\ -1 & 2 & 3 \\ 2 & -1 & 5 \end{bmatrix}$$

$$B = \begin{bmatrix} 0 & 2 & 1 \\ -2 & 3 & 7 \\ 2 & 1 & 0 \end{bmatrix}$$

Find AB ie. Matrix the givers the composition of the lin. functions for A&B.

row col matheod...
$$B = \begin{bmatrix} 0 & 2 & 1 \\ -2 & 3 & 7 \\ 2 & 1 & 0 \end{bmatrix}$$

$$A = \begin{bmatrix} 5 & 0 & 7 & 7 & 4 & 4 & 1 \\ -1 & 2 & 3 & 11 & 2 & 7 & 13 \\ 2 & -1 & 5 & 12 & 6 & -5 \end{bmatrix} = AB$$

$$A = \begin{bmatrix} r_1 \\ r_2 \end{bmatrix} \qquad B = \begin{bmatrix} c_1 & c_2 & c_3 \\ & & & \\$$

$$(AB)_{ij} = r_i \cdot c_j$$

