General concept: manipulating equations, simplifying expressions, canceling out things, factoring things

most fundamental concept

If you understand this concept well, you will be poised for success in math 243

analogy or analogy: anything in Calc I/II done with N2 variables, you need to be comfortable with so you can do it with 2N variables resp.

Exceptions are one-off units and last half of Calc 2. See 6/9 lecture for more info

other sources gen. follow this too

$a_1, a_2, a_3, \ldots$ const.

$v_1, v_2, \ldots$ vectors

General remark: $a, b, c, d, e, \ldots, r, s, t$ are typically scalars

u, v, w are vectors

x y z up to the situation

Q: Some students may ask, who cares where things are coming from? Just give us the formulas to plug everything in

A: you may not care, but other Also, your knowledge will be tiny changes. Many problems in math are small variations of given examples.

See 6/10 discussion for more commentary on this remark

general remark. If you miss class, download notes, and notice a remark in the notes is confusing, search the

segment of the recording used to create the remark

If that still leaves you confused, ask me by email writing what day & slide & remark quote you need help on

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General remark. Choose your own variable names. As long as you can do the work to solve the problem and it is clear to anyone reading the work how the calculation is going, no problem. There is some personal preference on whether to use u & v for a problem that needs 2 vectors or use v & w for example

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General remark: don't worry

about whether a vector is v or w as long as it's defined clearly. Focus on computation mistakes and conceptual errors instead, like $2(u+v) = 2u+v$ or taking $\|\sqrt{v}\|$ or $\|-u\| = -\|u\|$