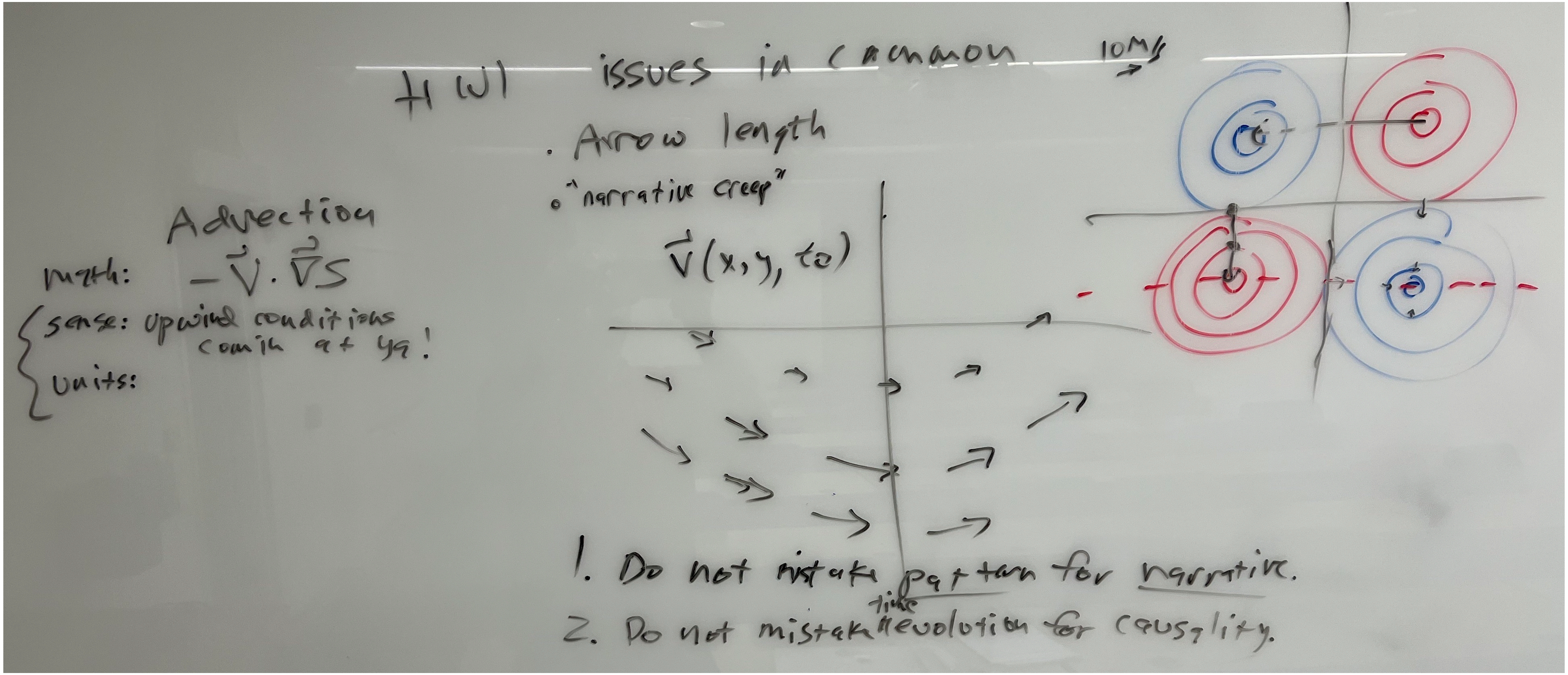
Class lecture
Monday after Labor Day

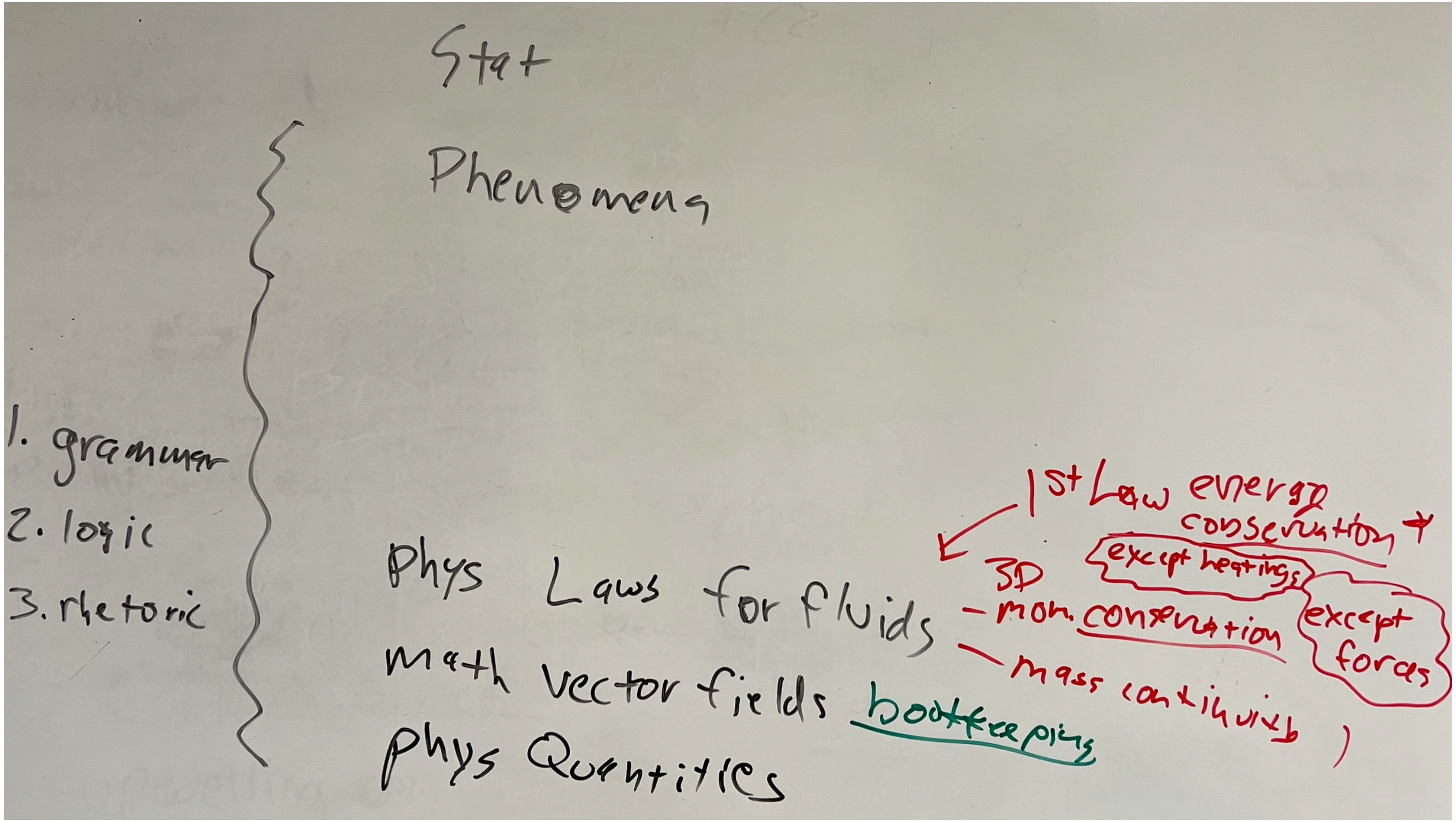
ATM 651 Fall 2022

Brian Mapes

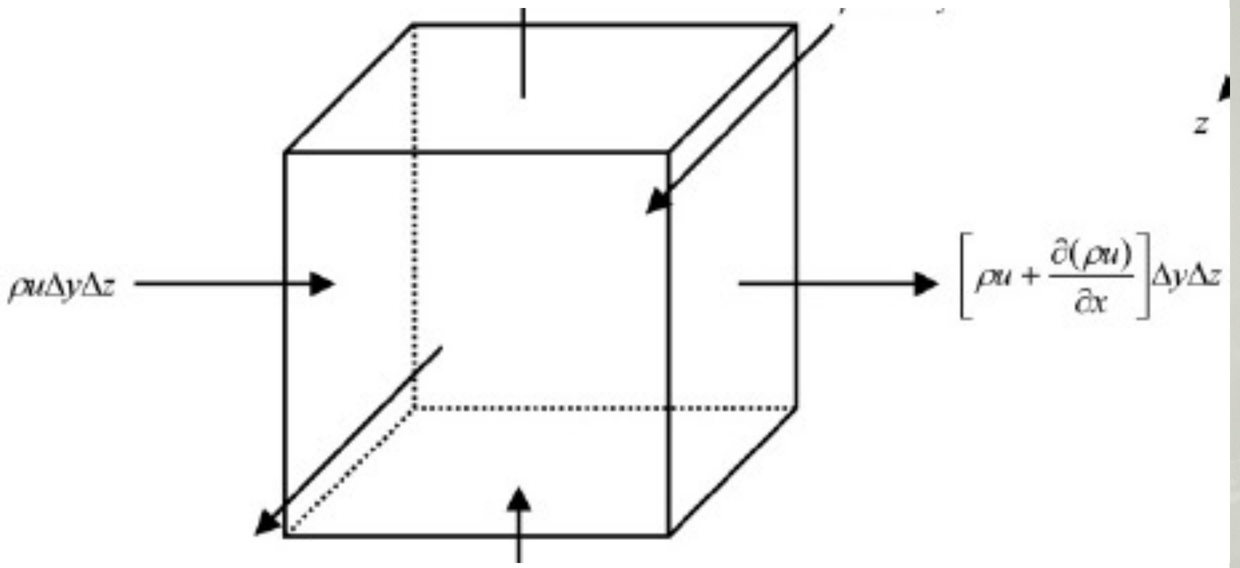
HW1 : some common errors

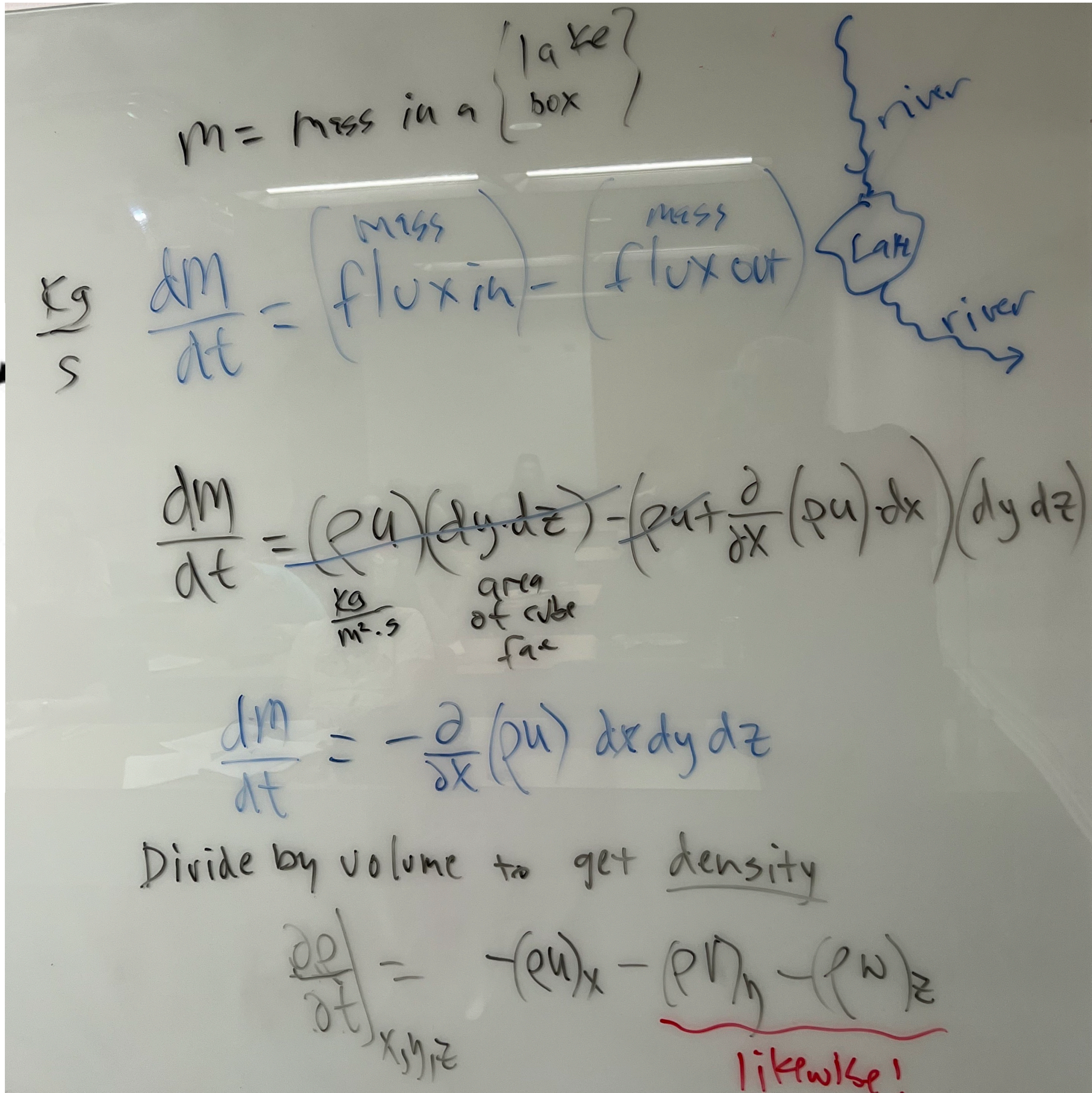


Where we are working today in course stack



That Cube Thingy for mass continuity

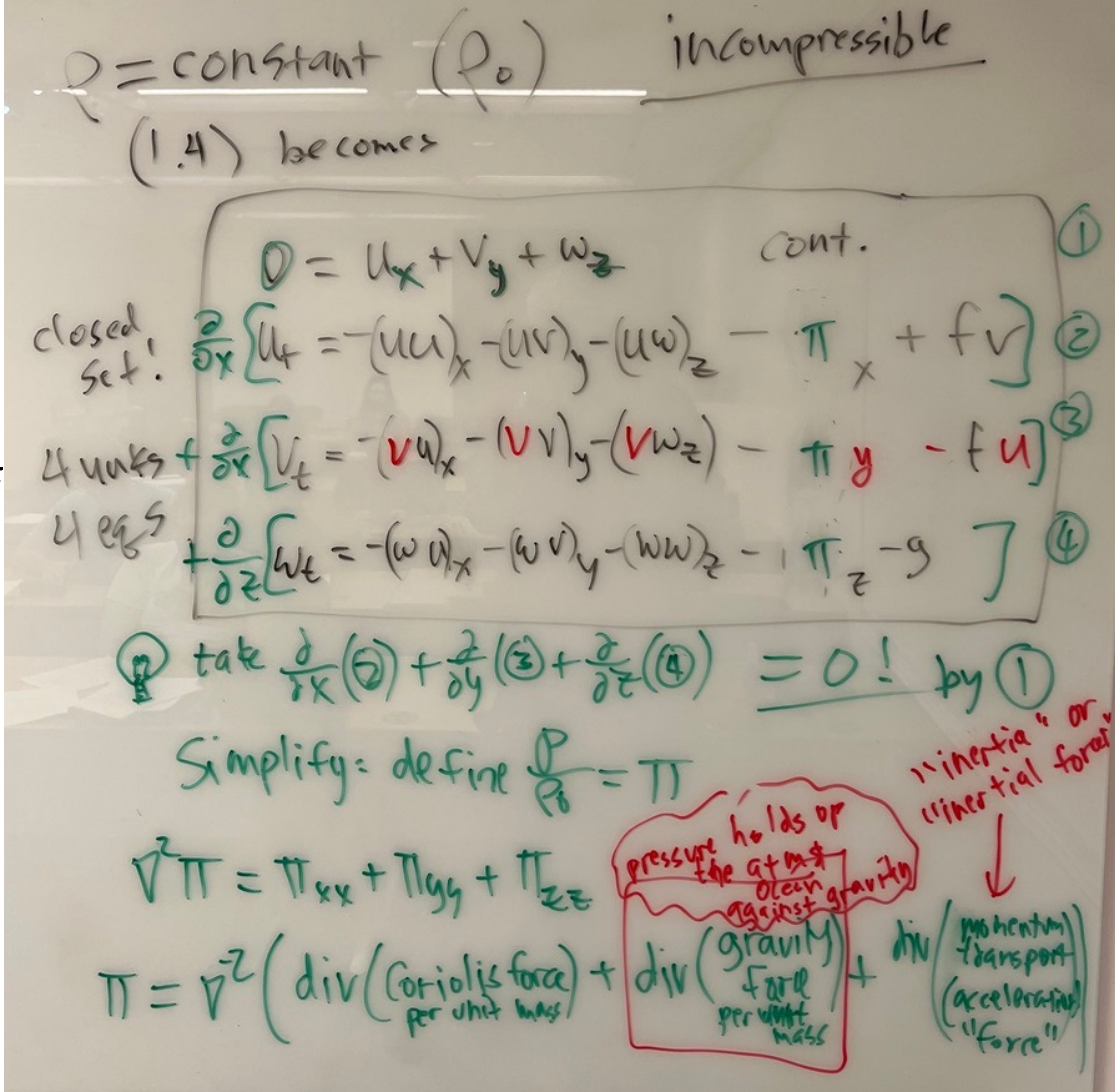




Our First Closed Set!

mass ***continuity (absolute conservation everywhere)***

momentum ***conservation except*** *for forces*



It becomes an equation for pressure →

What is this inverse Laplacian operation?

It *smooths* the complicated fields that are its inputs (divergence of forces).

What is Laplacian?

- curvature
- emphasizes small scales

$$f = \sin(x) + \sin(3x)$$

$$f_{xx} = -[\sin(x) + 9\sin(3x)]$$

small scales pop out

- used in edge detection
-

Inverse of Laplacian:

- hides small scales
- a smoothing operation

Tips for:

deriving advective from from flux form

Treat (rho*V) as one thing, don't sub-differentiate it.