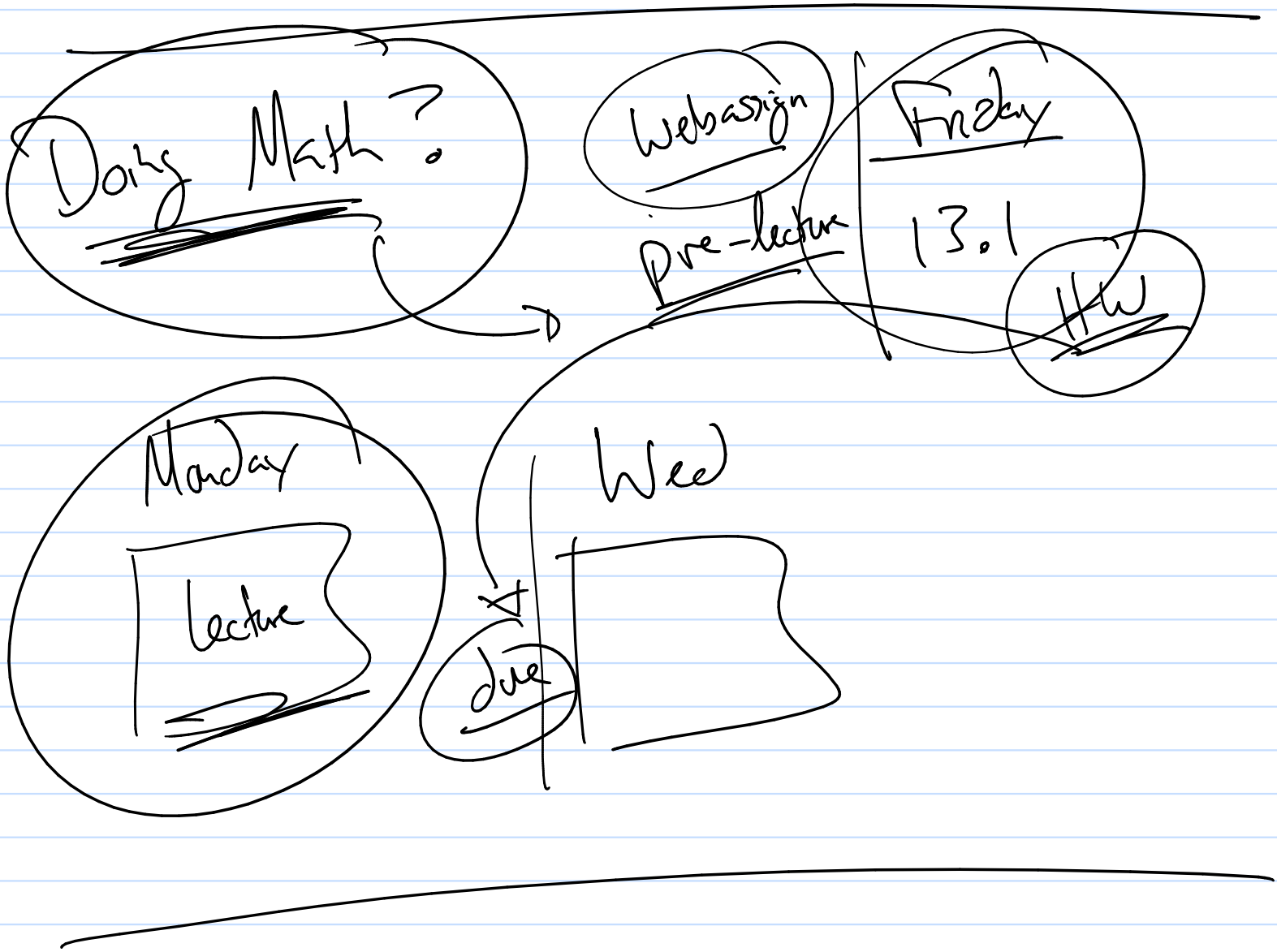
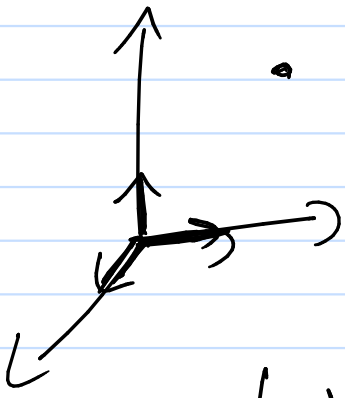
Math 344 (Calc 3)



12.5 / 12.6 (chapter 12)

read all ch 12

1D / 2D / 3D ((N^th Dimension))

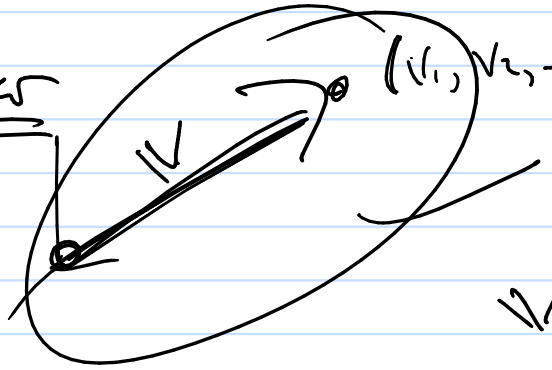


① Coord

$(x_1, x_2, \ldots, x_n)$

n-tuple

② Vector



bold font $\mathbf{v}$

$\mathbf{v} = \langle v_1, v_2, \ldots, v_n \rangle$

ch 13 Vectors toy = vector

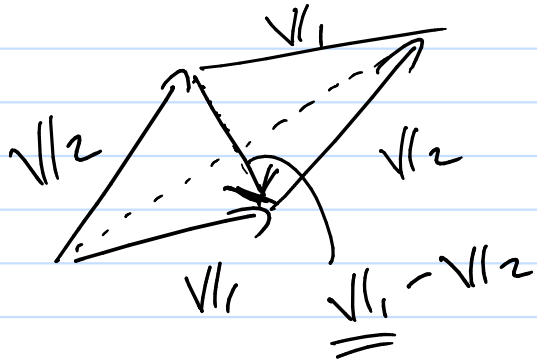
rules? (what can you do?)

$\mathbf{v}_1 + \mathbf{v}_2$

$\mathbf{v}_1 \cdot \mathbf{v}_2$ (dot product / scalar product)

$\mathbf{v}_1 \times \mathbf{v}_2$ (cross product)

$\vec{v}_1 - \vec{v}_2$



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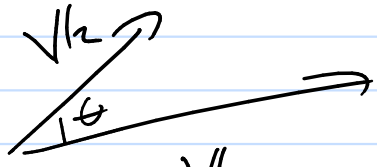
dot

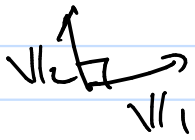


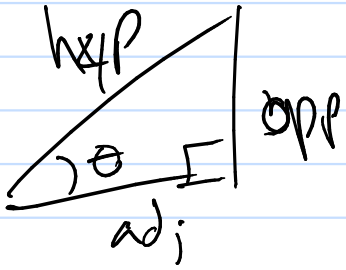
$\vec{v}_1 \cdot \vec{v}_2 = ad + be + cf$

$\vec{v}_1 = \langle a, b, c \rangle$

$\vec{v}_2 \langle d, e, f \rangle$

if $\boxed{\vec{v}_1 \cdot \vec{v}_2 = 0}$





3D objects and Math to represent them.

$y = 2x^2 + 3x - 1$

$P = a_0 + a_1 x + a_2 x^2 + a_3 x^3$