Welcome to Differential Geometry!

Compare and contrast the following curves

- $\alpha_a(t) = (\cos t, \sin t, t), t \in (0, 2\pi)$
- $\alpha_b(t) = (\cos 2t, \sin 2t, 2t), t \in (0, \pi)$
- $\alpha_c(t) = (\cos t, -\sin t, -t), t \in (-2\pi, 0)$
  where $\in$ means element of or inside of

What can you say about these curves and their similarities and differences? Try to come up with as many perspectives as possible. Discuss and select a board to write or sketch related information—try to add items other groups don't already have.

no eating or drinking at the tables, but you may step away if you need to hydrate or similar

Discuss how to compute and the meaning, geometry and physics of:

1. $\vec{v} - \vec{w}$
2. $\vec{v} + \vec{w}$
3. $\vec{v} \cdot \vec{w}$
4. $\vec{v} \times \vec{w}$
5. $|\vec{v}|$
6. $\arccos(\frac{\vec{v} \cdot \vec{w}}{|v||w|})$
7. $(\frac{\vec{v} \cdot \vec{w}}{|w||w|})\vec{w}$

If finished before I bring us back together, review from the video or look at or discuss upcoming work like practice submitting PDF of by-hand and Maple work or project 1.