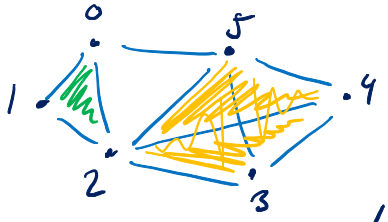
Homework 3

1. What is the boundary of $\sigma_{1,2,3} - \sigma_{2,3,4} - \sigma_{2,4,5} - \sigma_{2,5,6}$?

   Draw out the complex as well.

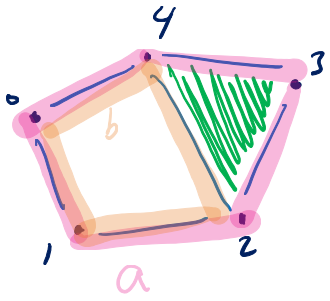
2. Compute $\partial_4(\sigma_{0,1,2,3,4} + \sigma_{0,2,3,4,5})$.

3. Find D_2 and D_1 for



4. What happens to D_k when we permute the vertex ordering?

5. Given

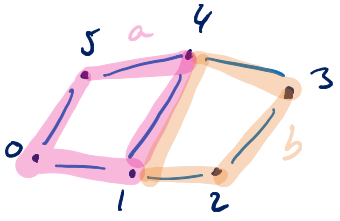


, what is $\partial_1(b)$? $\partial_1(a)$?

How about $\partial_1(a-b)$?

Write out in matrix form.

6. Given



what is $\partial_1(a+b)$? $\partial_1(a-b)$?

Recompute using coefficients in $\mathbb{Z}_2$.