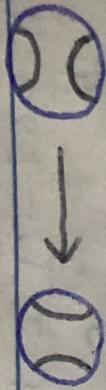
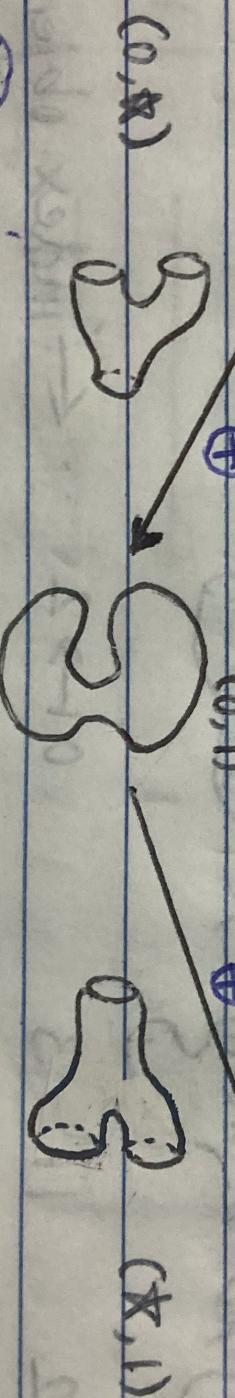
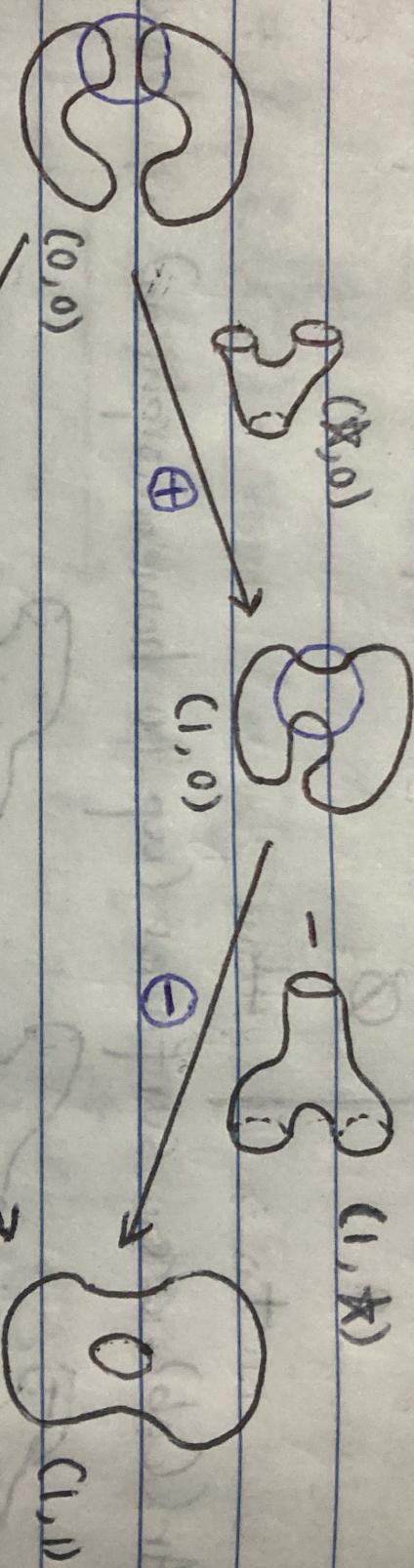


\* Conclude: Any cube of resolutions for a diagram  $D$  is a diagram in Cob, where 2-dim faces of the (hyper)cube commutes.

e.g.  $\bigcirc_2$



Trick: Add signs on edges via  $(-1)^{\# \text{ of } 1's \text{ before } \star}$ .

- Apply  $\mathcal{F}$  to the cube of resolutions:

$\text{Apply } \mathcal{F} : \text{sums over edges from height } h=1 \text{ to height } h=1^{\text{st}}$