Today

3:19 pm

1. Finish Ex 1

2. Homotopies with quotient spaces.

Munkres Thm 20.1

$X/\sim$ how do I understand htpy of maps

$$X/\sim \longrightarrow Y \quad ?$$

A htpy of maps $F_t(x) : X/\sim \times I \longrightarrow Y$

is cts iff it comes from a cts htpy of maps

$$\tilde{F}_t(x) : X \times I \longrightarrow Y$$

that is fixed on $t \in I$ respects equiv reln (const)!

1.3

Defn) (attaching maps)

X, Y top sp & $A \subseteq X$ subsp. Cts map $f : A \to Y$

"glue X to Y along A via f" $X \cup_f Y$

$= X \cup Y \,/\, (a \sim f(a))_{a \in A}$.

↳ gen's equiv reln

- use to defn CW cmplx, glue $\bigsqcup_\alpha D^n_\alpha$ to $X^{(n-1)}$ along ∂D^n_α.

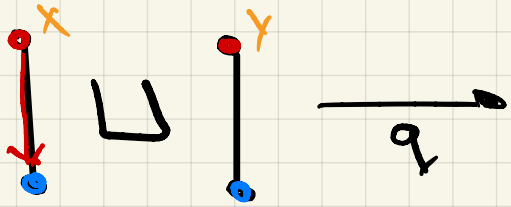
- Shellability arg, simpl cmplx X

↳ build X by gl Δ^n to X^{n-1} along a subset its bdry.

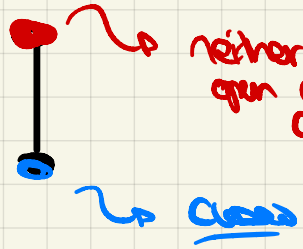
wants know (eg)

$Y \hookrightarrow X \sqcup_f Y$ embeds! (rest is homeo on img)

Cautionary eg.



data of disc. att map!



& $q|_Y$ not an embedding!