Point Set Review

The quot top

Defn $q: X \to Y$ the **saturation** of $U \subseteq X$ is $q^{-1}(q(U))$. (union of fibres)

Defn quotient topology

surjective map $q: X \to Y$ is a quot map if $U \subseteq Y$ is open $\iff q^{-1}(U)$ is open in X

Quot map $\Rightarrow$ cts

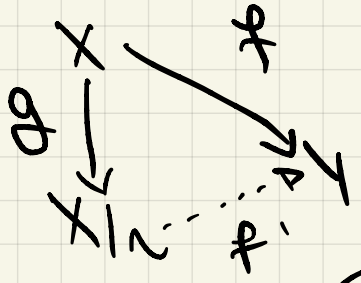
↳ it isn't open map only img of sat open sets open.

Given X w/ equiv reln $\sim$,

define $X/\sim$ w quot top

↳ unique top with $X \xrightarrow{q} X/\sim$ a quot map.

Univ prop.



A map $f: X \to Y$ const on equiv cl of $\sim$ factors uniquely thru $X/\sim$ via f'

↳ continuous when appl.