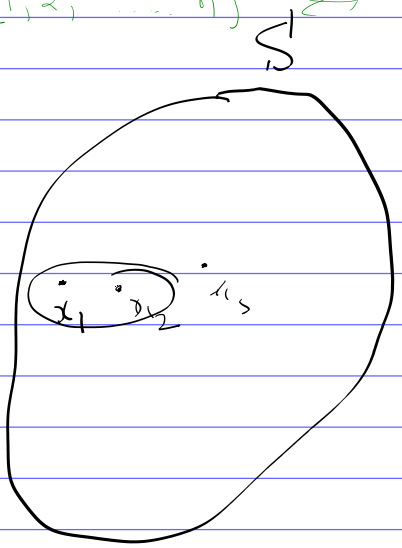
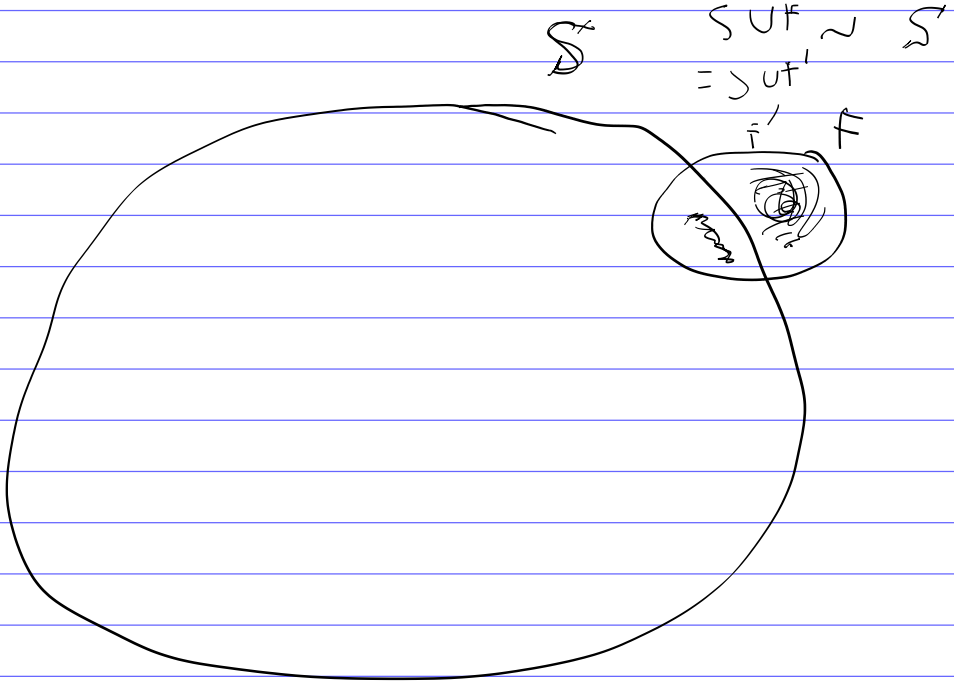
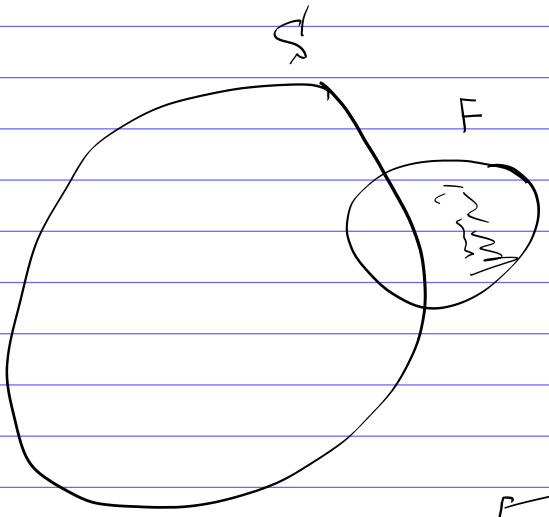
$\{1, 2, \ldots n\} \hookrightarrow A \quad n \in \mathbb{N}$



$S \setminus \{x_1\}$

- connected



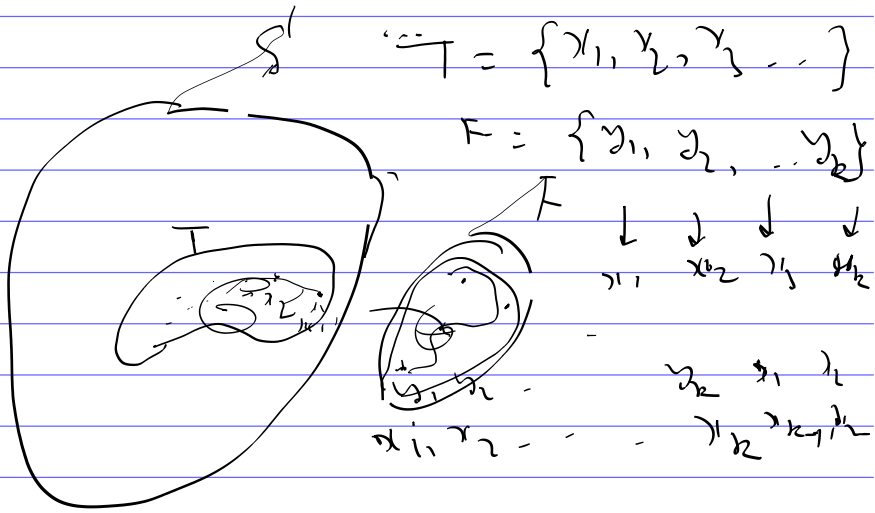


$S \cup F \sim S$

$= S \cup F' \sim S$

$F' = F \setminus (S \cap F)$

w.l.o.g. $S \cap F = \emptyset$



$T = \{x_1, x_2, x_3 \ldots\}$

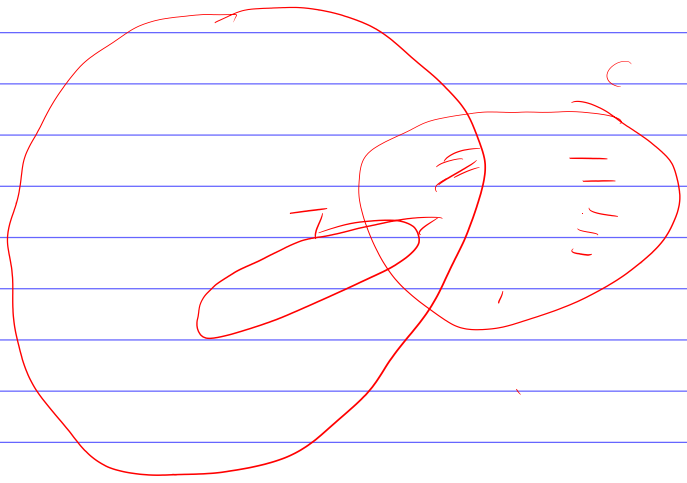
$F = \{y_1, y_2, \ldots y_k\}$

$S \cup F = (S \setminus T) \cup (T \cup F)$

$(S \setminus T)$

T

S^1 - uncountable



$B = \{(w_1, w_2 \ldots) \mid w_i \in \{0,1\}\}$

$(1\,1\,1\,1\,\ldots)$
$(0\,1\,0\,1\,1\,1\,\ldots)$
$(1\,1\,0\,0\,0\,1\,\ldots)$

$1/2 = 0.1000\ldots$

$0.01111\ldots$

$[0, \tfrac{1}{2}) \quad [\tfrac{1}{2}, 1)$

$[0, 1) \sim A \sim B$