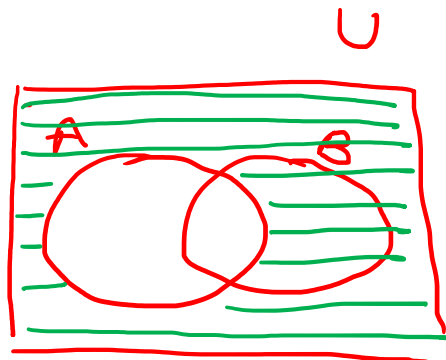
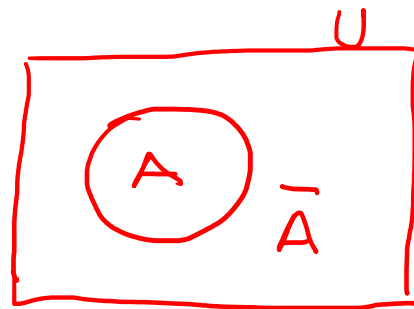


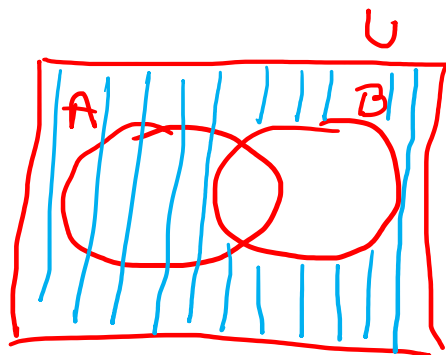
U : universo

$A \subset U$

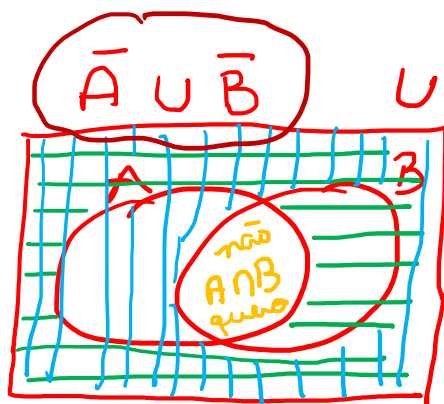
$B \subset U$



$\bar{A} \equiv$



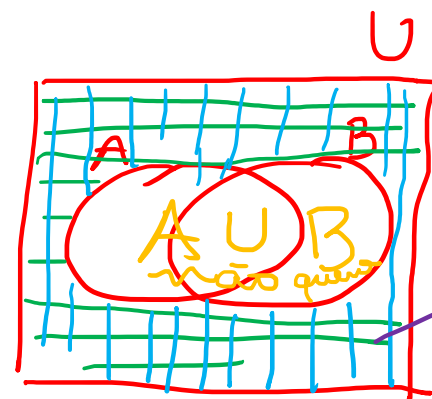
$\bar{B} \equiv$



por outro lado,

$\overline{(A \cap B)}$

$$\therefore \overline{(A \cap B)} = \bar{A} \cup \bar{B}$$



por outro lado,

$x \in U$ e $x \notin A \cup B$

$x \in \overline{(A \cup B)}$

$\bar{A} \cap \bar{B} \equiv$
 $x \in \bar{A} \wedge x \in \bar{B}$

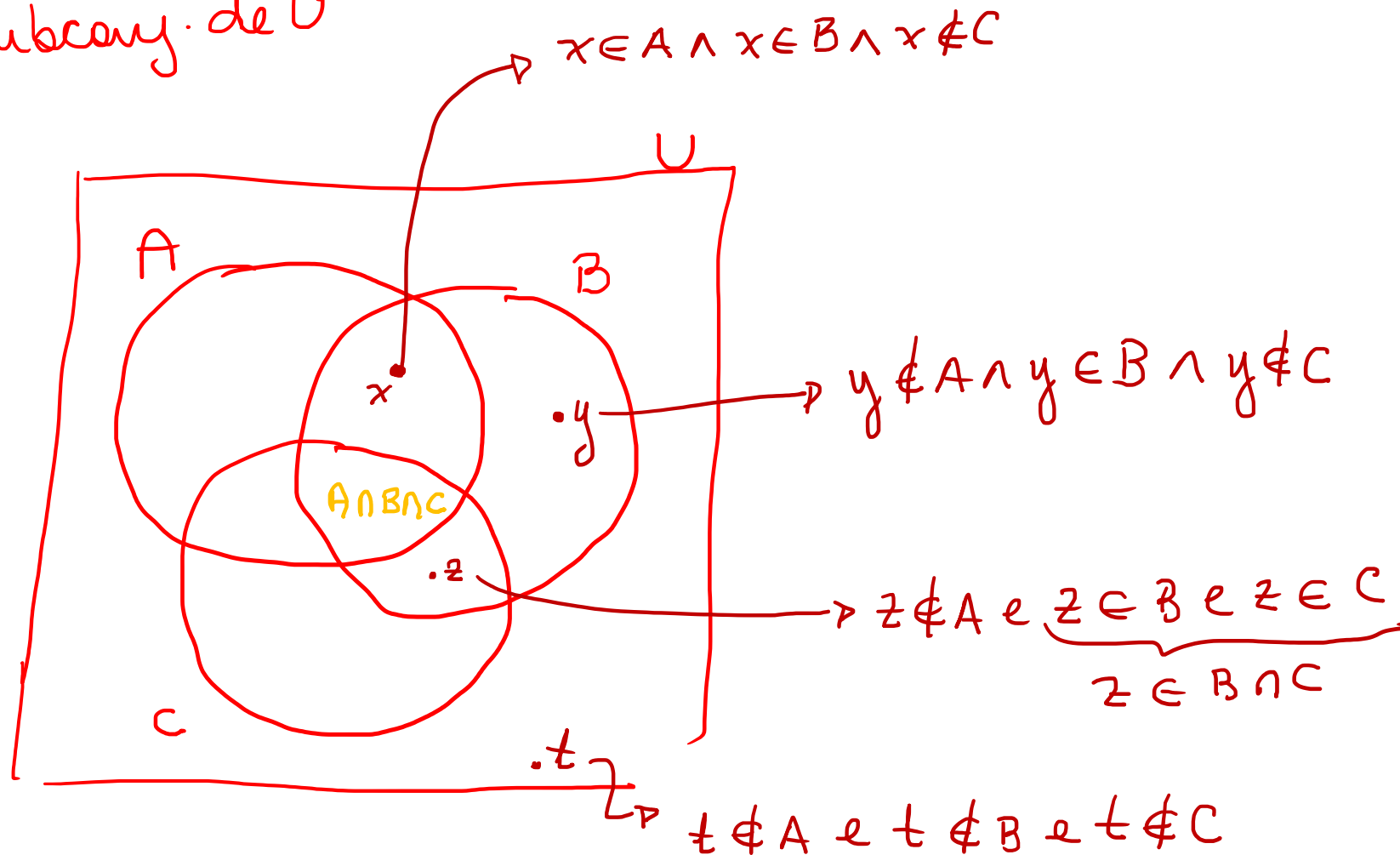
$$\overline{(A \cup B)} = \bar{A} \cap \bar{B}$$

Leis de De Morgan

$$\begin{cases} \neg(p \vee q) \equiv \neg p \wedge \neg q \\ \neg(p \wedge q) \equiv \neg p \vee \neg q \end{cases}$$

U : universo

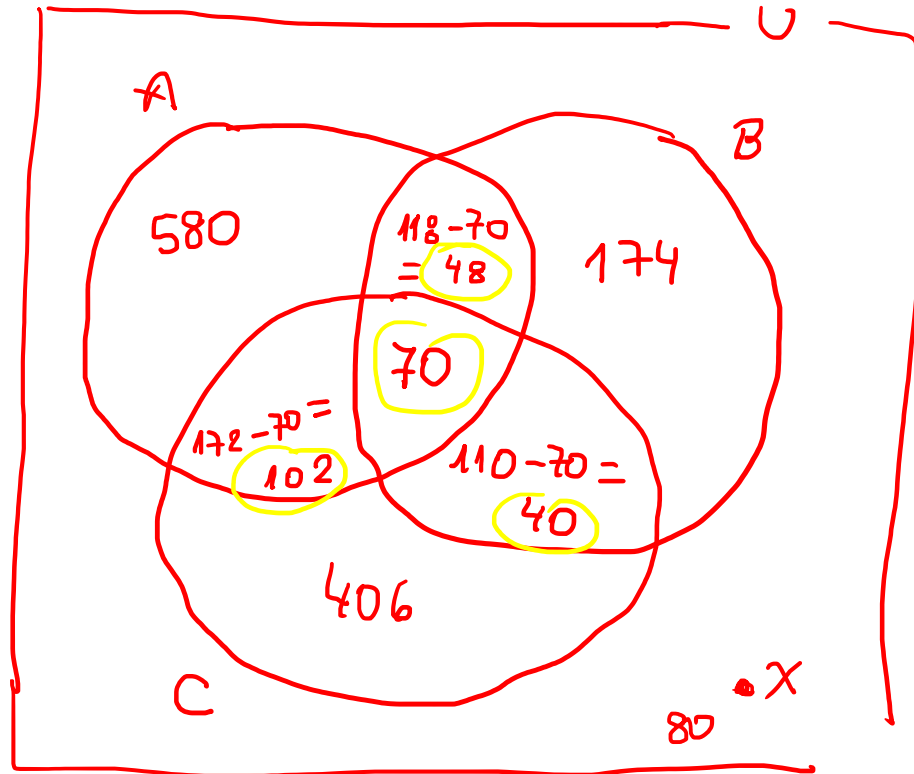
A, B, C subconj. de U



Pesquisa com 1500 pessoas

caminhada (A)
 corrida (B)
 ginástica (C)

Sim	Nº pessoas
Caminhada A	800
corrida B	332
ginástica C	618
$A \cap B$	118
$A \cap C$	172
$B \cap C$	110
$A \cap B \cap C$	70



a) não caminhada e não corrida e não ginástica

$$X = 1500 - 1420 = 80$$

b) nº pessoas exatamente 2 dessas atividades

$$102 + 48 + 40 = 190$$

c) não corre

$$580 + 102 + 406 + 80 =$$

$$n(U - B) = 1500 - 332$$

$$n(A \cup B \cup C) = 580 + 102 + 70 + 48 + 174 + 40 + 406 = 1420$$