NOME: FELIPE ANCHANTO DA CUNHA MENDES

RA: 2252740

LISTA 6

① a) VERDADEIRO

b) FALSO

$A = \{1, 2, 3\}$ $\forall x \in B, x \notin A$

$B = \{4, 5, 6\}$

c) FALSO

$A = \{1, 2\}$ $A \times B = \{(1,3), (1,4), (2,3), (2,4)\}$

$B = \{3, 4\}$ $B \times A = \{(3,1), (3,2), (4,1), (4,2)\}$

d) FALSO $A = \{1,2,3\}$ $B = \{4,5,6\}$

$(A \cap B)' = (\bar{A} \cup \bar{B}) = \{1,2,3,4,5,6\}$, $\bar{A} \cap \bar{B} = \emptyset$

e) VERDADEIRO

f) FALSO

A QUANTIDADE DE CONJ. VAZIO P/ SE ANULAR

(2) A: CONJ DOS ANIMAIS
B: CONJ DOS CANTORES
C: CONJ DOS ATORES

$|A| = 114$ $|A \cap B| = 64$ $|A \cap B \cap C| = ?$
$|B| = 152$ $|B \cap C| = 12$ $|A \cup B \cup C| = 202$
$|C| = 19$ $|A \cap C| = 8$

$|A \cup B \cup C| = |A| + |B| + |C| - |A \cap B| - |A \cap C| - |B \cap C| + |A \cap B \cap C|$
$202 = 114 + 152 + 19 - 64 - 12 - 8 + |A \cap B \cap C|$
$202 = 235 - 84 + |A \cap B \cap C|$
$202 - 201 = |A \cap B \cap C|$
$|A \cap B \cap C| = 7$

(3) $|M| = 600$ $|M \cap H| = 200$ $|M \cap H \cap S| = 20$
$|H| = 400$ $|M \cap S| = 150$ $|U| = 1000$
$|S| = 300$ $|S \cap H| = 100$

$|M \cup H \cup S| = |M| + |H| + |S| - |M \cap H| - |M \cap S| - |S \cap H| + |M \cap H \cap S|$
$|M \cup H \cup S| = 600 + 400 + 300 - 200 - 150 - 100 + 20$
$|M \cup H \cup S| = 1300 - 450 + 20$
$|M \cup H \cup S| = 870$

a) $1000 - 870 = 130$ LIVROS NENHUM DOS GRUPOS

b) # COMEM SÓ MORENINHA:

$|M| - |M \cap H| - |M \cap S| + |M \cap H \cap S| = 600 - 200 - 100 + 20 = 270$

COMEM SÓ MULHER:

$|H| = |M \cap H| - |S \cap H| + |M \cap H \cap S| = 400 - 300 - 100 + 20 = 120$

COMEM SÓ SORVETE:

$|S| - |M \cap S| - |S \cap H| + |M \cap H \cap S| = 300 - 150 - 100 + 20 = 70$

TOTAL: $270 + 120 + 70 = 410$ PESSOAS

c) $T = |M \cap H| + |M \cap S| + |S \cap H| - 2|M \cap H \cap S|$

$= 200 + 150 + 100 - 40$

$= 410$ PESSOAS //

(4) $|A \cup B| = 8$ $|A \cup B \cup C| = 12$

$|A \cup C| = 9$ $|A \cap B \cap C| = 2$

$|B \cup C| = 10$ $|A| + |B| + |C| = ?$

$|A \cup B| = |A| + |B| - |A \cap B|$ $\therefore |A \cap B| = |A| + |B| - |A \cup B|$

$|A \cup C| = |A| + |C| - |A \cap C|$ $\therefore |A \cap C| = |A| + |C| - |A \cup C|$

$|B \cup C| = |B| + |C| - |B \cap C|$ $\therefore |B \cap C| = |B| + |C| - |B \cup C|$

$|A \cup B \cup C| = |A| + |B| + |C| - |A \cap B| - |A \cap C| - |B \cap C| + |A \cap B \cap C|$

$|A \cup B \cup C| = |A| + |B| + |C| - |A| - |B| + |A \cup B| - |A| - |C| + |A \cup C| - |B| - |C| + |B \cup C| + |A \cap B \cap C|$

$|A| + |B| + |C| = |A \cup B| + |A \cup C| + |B \cup C| + |A \cap B \cap C| - |A \cup B \cup C|$

$= 8 + 9 + 10 + 2 - 12 = 17$ //