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

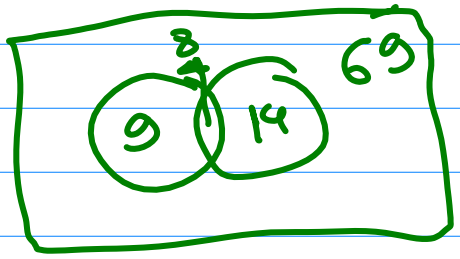
$|A \cup B \cup C| = |A| + |B| + |C| - |A \cap B| - |B \cap C| - |A \cap C| + |A \cap B \cap C|$

(7)

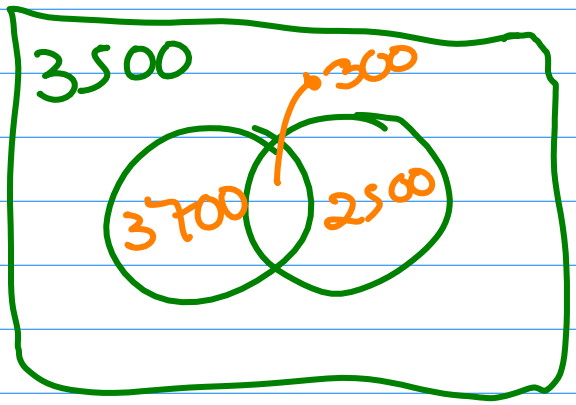
(1) $|A \cup B| = 17 + 22 - 8$

$|A \cup B| = 31$

R: 69%



(2)



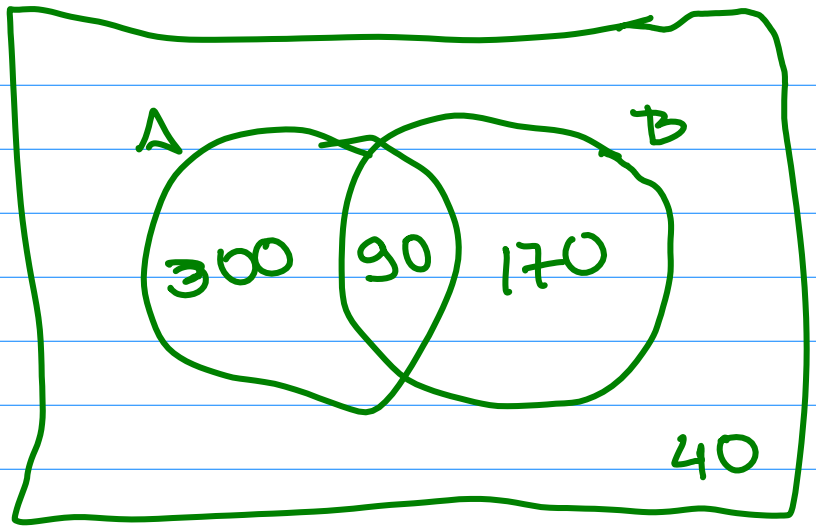
$4000 - 300 = 3700$

$10.000 - 3,500 = 4600 + 2500 - |A \cap B|$

$6500 = 6800 - |A \cap B|$

$|A \cap B| = 300$

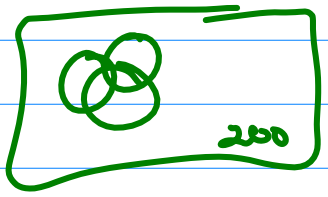
(3)



$300 + 90 + 170 + 40 = 600$ h

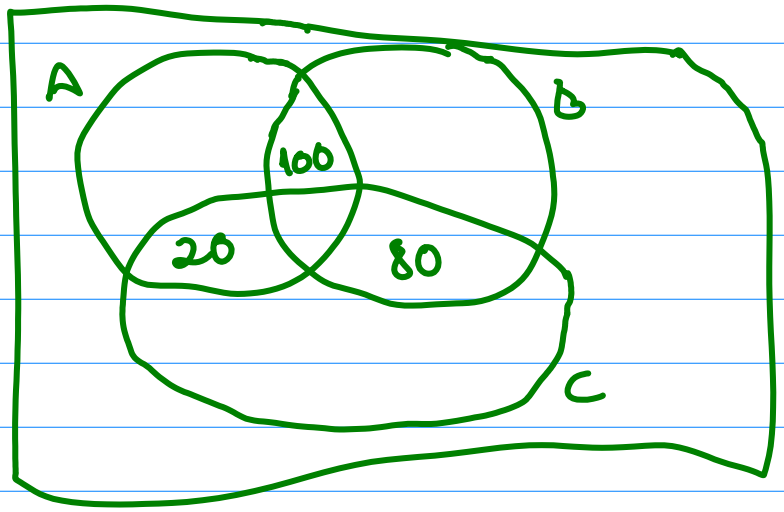
(4) $|E \cup N \cup H| = 400 + 1220 + 1080 - 220 - 180 - 800 + 100$

$|E \cup N \cup H| = 1600$ h



$1800 - 1600 = 200$ h

(5)



$|A| = 120$

$|B| = 180$ h

$|C| = 100$

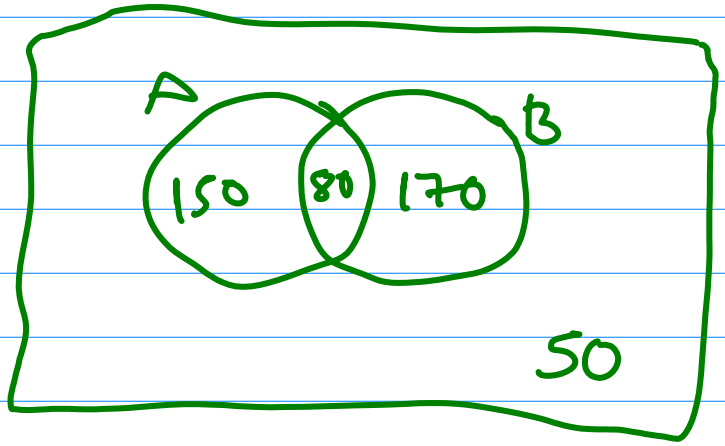
2

⑥

$450 - 50 = 230 + 250 - |A \cap B|$

$400 = 480 - |A \cap B|$

$|A \cap B| = 80$



a) 80

b) 150

c) 170 d) 220

⑦ $|A \cup B \cup C| = 105 + 200 + 160$

$- 25 - 40 - 25$

$+ 5$

$|A \cup B \cup C| = 465 - 90 + 5$

$470 - 90$

380

$380 + 120 = \underline{500}$

(8)

$100 - x = 47 + 32 + 21 - 7 - 5 - 6 + 2$

$x = ?$

(6)

(1) $\emptyset \cap \{\emptyset\} = \emptyset$

$(A \cap B)' = A' \cap B'$

$A = \{1\}$

$B = \{2\}$

$U = \{1,2,3\}$

$\{1,2,3\} \neq \{2,3\} \cap \{1,3\}$

$\{1,2,3\} \neq \{3\}$

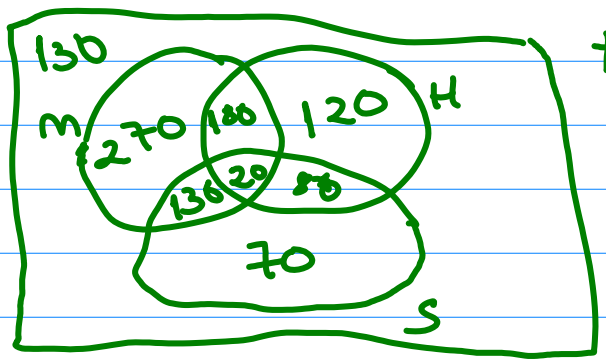
$A \cap B = \emptyset \rightarrow A \subset B$

$A = \{1\}$

$B = \{2\}$

(3) $1000 - x = 600 + 400 + 300 - 200 - 150 - 100$

$x = 130$



$+ 20$

i) 136

ii) $270 + 120 + 70$

iii) $180 + 130 + 80 + 20$

(4)

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

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

$$11 = |A| + |B| + |C| - |A \cap B| - |B \cap C| - |A \cap C| + 2$$

$$11 = |A| + |B| + |C| - |A| - |B| + 8 - |B| - |C| + 10 - |A| - |C| + 9 + 2$$

$$11 = 8 + 10 + 9 + 2 - |A| - |B| - |C|$$

$$|A| + |B| + |C| = 29 - 11$$

$$= 18$$

(4)

(3) $\{2, 3, 4\}$ (1)

$\{a, b, c\}$ (3)

$\{2, 3, 4\}$ (1)

$\{a, b, c\}$ (3)

$\emptyset$ (2)

$\emptyset$ (2)

(4) $\{2, a, 3, b, 4, c\}$

$\{2, 3, 4\}$ (1)

(7) a) $\{x \mid x \in \mathbb{N} \wedge (\exists q)(q \in \{2,3\} \wedge x = 2q)\}$

$\{4,6\}$

b) $\{x \mid x \in \mathbb{N} \wedge (\exists y)(\exists z)(y \in \{0,1\} \wedge z \in \{3,4\} \wedge y < x < z)\}$

$\{1,2,3\}$

c) $\{x \mid x \in \mathbb{N} \wedge (\forall y)(y \text{ par} \rightarrow x \neq y)\}$

$\{1,3,5,7,9,\ldots\}$

(10) $R = \{1, 3, \pi, 4.1, 5, 10\}$ $\quad S = \{\{1\}, 3, 5, 10\}$

$T = \{1, 3, \pi\}$ $\quad U = \{\{1,3,\pi\}, 2\}$

a) $S \subset R$ no $(\forall x)(x \in S \rightarrow x \in R)$ F $\{1\} \notin R$

d) $1 \subset U$ F 1 no es conj

e) $\{1\} \subset T$ V $\quad 1 \in T \in U$ V

f) $\{1\} \subset S$ F $1 \notin S$

(5) $A-B = A \cap B'$

(6) $A-B = \sim (B-A)$

e) $A-B = (B-A)'$

$= (B \cap A')'$

$A-B = A \cup B'$

$A \cap B' \neq A \cup B'$

f) $(A-B) \cap (B-A) = \emptyset$

$(A \cap B') \cap (B \cap A') =$

$A \cap A' \cap B \cap B' = \emptyset$

$\emptyset$

$A \cap (B-C) = (A \cap B) - (A \cap C)$

K) $(A-B) \cup (B-C) = A-C$

$(A \cap B') \cup (B \cap C') = A \cap C'$

$(A' \cup B) \cap (B' \cup C) = A' \cup C$

$A = \{1,2\}$

$B = \{3,4\}$

$C = \{4,1,2\}$

F

$\{1,2\} \cup \{3\} \neq \{4\}$

e) $(A-C)\cap(A-B)=A-(B\cup C)$ ✓

$(A\cap C')\cap(A\cap B')=$

$A\cap(B'\cap C')=$

$A\cap(B\cup C)'=$

$A-(B\cup C)$