0 FALSO   1 VERO

$P \lor q \lor (R \land S)$

2^4 casi

P	Q	R	S	$(R \land S)$	$P \lor q \lor (R \land S)$
0	0	0	0	0	0
0	0	0	1	0	0
0	0	1	0	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	1	0	1
0	1	1	0	0	1
0	1	1	1	1	1
1	0	0	0	0	1
1	0	0	1	0	1
1	0	1	0	0	1
1	0	1	1	1	1
1	1	0	0	0	1
1	1	0	1	0	1
1	1	1	0	0	1

ES 1 TRASFORMARE IN CNF E DNF la seguente: $P \wedge (q \vee (s \wedge (\neg P \vee \neg q)))$

1) $(P \wedge q) \vee (P \wedge s \wedge (\neg P \vee \neg q))$

2) $(P \wedge q) \vee (P \wedge \cancel{s \wedge} \neg P) \vee (P \wedge s \wedge \neg q)$

c'è P e $\neg P$

3) $(P \wedge q) \vee (P \wedge s \wedge \neg q)$ ← DNF

1) $(P \vee P) \wedge (P \vee s) \wedge (P \vee \neg q) \wedge (q \vee P) \wedge (q \vee s) \wedge \cancel{(q \vee \neg q)}$

$P \wedge (P \vee s) \wedge (P \vee \neg q) \wedge (q \vee P) \wedge (q \vee s)$ ← CNF

Es 2   Lucido 64 $(A \setminus B) \cup (C \setminus B) = (A \cup C) \setminus B$

$A = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$

$C = \{5, 10, 15, 20\}$

$B = \{10, 20\}$

$A / B = \{2, 4, 6, 8, 12, 14, 16, 18\}$

$C / B = \{5, 15\}$

$(A/B) \cup (C/B) = \{2, 4, 5, 6, 8, 12, 14, 15, 16, 18\}$

$A \cup C = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$

$(A \cup C) / B = \{2, 4, 6, 8, 12, 14, 16, 18\}$

$(\subseteq)$ Sia $x \in (A/B) \cup (C/B) \Rightarrow x \in A$ e $x \notin B$ oppr

$x \in C$ e $x \notin B \quad \Rightarrow$

$\Rightarrow x \in A \cup C$ e $x \notin B \Rightarrow x \in (A \cup C)/B \Rightarrow$

$(A/B) \cup (C/B) \subseteq (A \cup C)/B$

$(\supseteq)$ Sia $x \in (A \cup C)/B \Rightarrow x \in A \cup C$ e $x \notin B \Rightarrow$

$x \in A$ e $x \notin B$ oppr $x \in C$ e $x \notin B \Rightarrow$

$x \in A \backslash B$ oppr $x \in C \backslash B \Rightarrow x \in (A \backslash B) \cup (C \backslash B)$

$(A \cup C) \backslash B \subseteq (A \backslash B) \cup (C \backslash B)$

SONO UGUALI

ES 5 LUCIDO 64

$$(A \setminus C) \cap (B \setminus C) \cap (A \setminus B) = \emptyset$$

Supponiamo $\exists x \in (A \setminus C) \cap (B \setminus C) \cap (A \setminus B)$

$\Rightarrow$ se $x \in A \setminus C \Rightarrow x \in A$

se $x \in B \setminus C \Rightarrow x \in B$

$\Rightarrow x \in A \setminus B$ $\quad * \Rightarrow \not\exists x \in (A \setminus C) \cap (B \setminus C)$

$\underset{\text{ASSURDO}}{\uparrow}$ $\qquad - \cap (A \setminus B)$

$\Rightarrow \left(A \setminus C\right) \cap \left(B \setminus C\right) \cap \left(A \setminus B\right) = \emptyset$

SI POSSONO FARE CON LE TAVOLE DI VERITÀ

ES n° 8 LUCIDO 64

$$A \triangle (B \triangle C) = (A \triangle B) \triangle C \qquad A \triangle B = (A \setminus B) \cup (B \setminus A)$$

A	B	C	B\C	C\B	B△C	A\(B△C)	(B△C)\A	A△(B△C)
0	0	0	0	0	0	0	0	0
0	0	1	0	1	1	0	1	1
0	1	0	1	0	1	0	1	1
0	1	1	0	0	0	0	0	0
1	0	0	0	0	0	1	0	1
1	0	1	0	1	1	0	0	0
1	1	0	1	0	1	0	0	0
1	1	1	0	0	0	1	0	1

FARE L'ALTRO MEMBRO

A	B	C	A\B	B\A	A△B	C\(A△B)	(A△B)\C	(A△B)△C
0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	1	0	1
0	1	0	0	1	1	0	1	1
0	1	1	0	1	1	0	0	0
1	0	0	1	0	1	0	1	1
1	0	1	1	0	1	0	0	0
1	1	0	0	0	0	0	0	0
1	1	1	0	0	0	1	0	1