

Ejemplos (Tutoría)

Ejemplo 1:

$$\begin{aligned} & p \wedge \sim (p \vee q) \\ \equiv & p \wedge (\sim p \wedge \sim q) \\ \equiv & (p \wedge \sim p) \wedge \sim q \\ \equiv & F \wedge \sim q \\ \equiv & F \end{aligned}$$

Ejemplo 2:

$$\begin{aligned} & \sim [(p \vee p) \rightarrow p] \\ \equiv & \sim [\sim (p \vee p) \vee p] \\ \equiv & (p \vee p) \wedge \sim p \\ \equiv & p \wedge \sim p \\ \equiv & F \end{aligned}$$

Ejemplo 3:

$$\begin{aligned} & [(p \vee q) \wedge \sim q] \rightarrow p \\ \equiv & \sim [(p \vee q) \wedge \sim q] \vee p \\ \equiv & [\sim (p \vee q) \vee q] \vee p \\ \equiv & [(\sim p \wedge \sim q) \vee q] \vee p \\ \equiv & (q \vee \sim p) \vee p \\ \equiv & q \vee v \\ \equiv & v \end{aligned}$$

Ejemplo 4:

$$\begin{aligned} & [p \vee q \vee (\sim p \wedge \sim q)] \wedge [(\sim p \vee q) \wedge p] \\ \equiv & (q \vee p \vee \sim q) \wedge [(\sim p \wedge p) \vee (p \wedge q)] \\ \equiv & (v \vee p) \wedge [F \vee (p \wedge q)] \\ \equiv & v \wedge (p \wedge q) \\ \equiv & p \wedge q \end{aligned}$$

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Ejemplo 5:

$$\begin{aligned}[(p \rightarrow q) \wedge (q \vee p)] &\rightarrow \sim (p \wedge q) \equiv q \rightarrow \sim p \\ [(\sim p \vee q) \wedge (q \vee p)] &\rightarrow \sim (p \wedge q) \equiv \sim q \vee \sim p \\ [(q \vee \sim p) \wedge (q \vee p)] &\rightarrow \sim (p \wedge q) \equiv \sim q \vee \sim p \\ [q \vee (\sim p \wedge p)] &\rightarrow \sim (p \wedge q) \equiv \sim q \vee \sim p \\ [q \vee F] &\rightarrow (\sim p \vee \sim q) \equiv \sim q \vee \sim p \\ q \rightarrow (\sim p \vee \sim q) &\equiv \sim q \vee \sim p \\ \sim q \vee (\sim p \vee \sim q) &\equiv \sim q \vee \sim p \\ \sim p \vee (\sim q \vee \sim q) &\equiv \sim q \vee \sim p \\ \sim q \vee \sim p &\equiv \sim q \vee \sim p\end{aligned}$$