

$$1) \text{ si } p \rightarrow (q \vee \neg r) = F \quad \begin{array}{c} \underline{V} \\ p \rightarrow \overbrace{(q \vee \neg r)}^F \end{array}$$

$$\begin{array}{l} p: V \checkmark \\ q: F \checkmark \\ r: V \checkmark \end{array}$$

$$\begin{array}{l} V \rightarrow F \vee F \\ V \rightarrow F \\ F \end{array}$$

$S = P = V$, debido a que conectores lógicos indican que es V para que el $S = (q \vee \neg r) = F$, debe ser Falso para que el valor de verdad compuesto sea Falso (polinomio Booleano sea F)

$S = q = F$, debido a que en disyunción sea Falsa ambos valores deben ser F

$S = r = V$, en la proposición existe su negación, para que la disyunción sea Falsa

$S = p \rightarrow (q \vee \neg r) = F$, el polinomio Booleano es Falso debido a que posee conectores lógicos condicionales y como la primera proposición (p) es verdadera, la segunda debe ser Falsa.

$$2) \text{ Si } (r \rightarrow p) \rightarrow (p \wedge \neg q) = V$$

$$\begin{array}{c} \underline{V} \quad \underline{V} \\ (p \vee q) \rightarrow V \end{array}$$

$$V \rightarrow V$$

$$V \checkmark$$

opciones válidas

$$\begin{array}{l} V \rightarrow V \rightarrow V \wedge V \quad X \\ F \rightarrow V \rightarrow V \wedge F \\ F \rightarrow F \rightarrow F \wedge F \end{array}$$

$$V \rightarrow V \rightarrow V \wedge F$$

$$\begin{array}{l} V \rightarrow F \\ F \end{array}$$

$$\begin{array}{l} R = V \\ p = V \\ q = V \end{array}$$

$S = (p \vee q) \rightarrow V$, debido a condicional

3)

p	q	r	$p \wedge q$	$\overbrace{(p \wedge q) \rightarrow r}^A$		$\sim A$	$\sim r$	$\overbrace{(p \wedge q \vee \sim r)}^B$		$A \leftrightarrow B$
V	V	V	V	V	F	F	F	V	V	V
V	V	F	V	V	V	V	V	V	V	F
V	F	V	F	F	F	F	F	F	F	F
V	F	F	F	V	F	F	V	V	V	V
F	V	V	F	F	F	F	F	F	F	V
F	V	F	F	V	F	F	V	V	V	F
F	F	V	F	F	F	F	F	F	F	V
F	F	F	F	V	F	F	V	V	V	V

el polinomio booleano $[(p \wedge q) \rightarrow r] \leftrightarrow (p \wedge q) \vee \sim r$ se determina tautología debido a que su valor de verdad es siempre verdadero, además consigo trae que hay equivalencia lógica al ser tautología.

4) $a = A \cap B$
 $b = A \cup B$
 $c = A - B \text{ y } B - A = A \Delta B$

$$A = \{1, 3, 5, 7, 9\}$$

$$B = \{2, 3, 4, 5, 6, 8\}$$

$$A = \{1, 3, 5, 7, 9\}$$

$$B = \{x \in \mathbb{N} \mid 2 \leq x \leq 8\} = \{2, 3, 4, 5, 6, 8\}$$

$$B = \{2, 3, 4, 5, 6, 8\}$$

$$A - B = \{1, 7, 9\} \checkmark$$

$$B - A = \{2, 4, 6, 8\} \checkmark$$

1) $a = \{3, 5\} \checkmark$
 $b = \{1, 2, 3, 4, 5, 6, 7, 8, 9\} \checkmark$
 $A - B = \{\emptyset\}, B - A = \{1, 2, 4, 6, 7, 8, 9\}$

B) $A = \{-6, -4, -2, 0, 1, 3, 5, 7\}$
 $B = \{1, \infty\}$

$$a = \{1, 3, 5, 7\} \checkmark$$

$$b = \{-6, -4, -2, 0, 1, \dots\}$$

$$A - B = \{\emptyset\}$$

$$B - A = \{-6, -4, -2, 0\}$$

$$5) A = \{x \in \omega_0 \mid x \leq 9\} = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$B = \{1, 4, 6, 7, 10, 14\}$$

$$C = \{3, 5, 6, 7, 9\}$$

$$D = \{0, 2, 4, 6, 8\}$$

$$1. A \cap C = \{3, 5, 6, 7, 9\} \checkmark$$

$$2. A \cup B = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14\} \checkmark$$

$$3.1 (B \cap C) = \{6, 7\}$$

$$3.2 (B \cap C) \cap D = \{6\} \checkmark$$

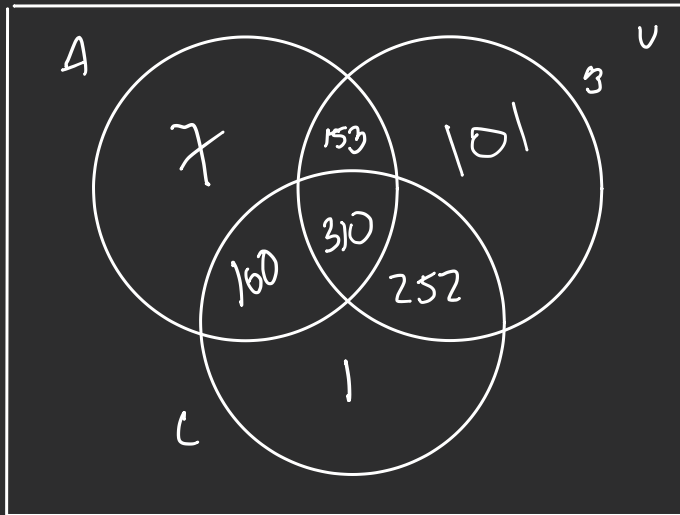
$$6) \phi = \{0\} = \mathbb{F} \checkmark$$

$$x \in \{x\} = \mathbb{V} \checkmark$$

$$\phi = \{\phi\} = \mathbb{F} \checkmark$$

$$\phi \in \{\phi\} = \mathbb{V} \checkmark$$

7)



$$U = 1000$$

A = Conjunto consume Carne

B = " " Lockers

C = " " Vanduras

$$A = 630 \checkmark$$

$$B = 816 \checkmark$$

$$C = 723 \checkmark$$

$$A \cap C = 470 \checkmark$$

$$A \cap B = 463 \checkmark$$

$$C \cap B = 562 \checkmark$$

$$A \cap B \cap C = 310 \checkmark$$

$$\begin{array}{r} 1000 \\ - 630 \\ - 370 \\ \hline 310 \end{array}$$

$$\begin{array}{r} 723 \\ - 160 \\ - 310 \\ - 252 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 562 \\ 310 \\ 252 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 1 \\ 160 \\ 310 \\ 252 \\ \hline 723 \end{array}$$

$$\begin{array}{r} 463 \\ - 310 \\ \hline 153 \end{array}$$

$$\begin{array}{r} 816 \\ - 310 \\ - 252 \\ \hline 153 \end{array}$$

$$\begin{array}{r} 1 \\ 610 \\ 470 \\ - 310 \\ \hline 160 \\ 1 \\ 153 \\ 101 \\ 310 \\ 252 \\ \hline 816 \end{array}$$

$$S, A = \{1, 2, 3, 4, 5, 6\}$$

$$B = \{4, 5, 6, 7, 8, 9\}$$

$$C = \{2, 4, 6, 8, 10\}$$

$$A - B = \{1, 2, 3\}$$

$$C - B = \{2, 10\}$$

$$B - A = \{7, 8, 9\}$$

$$A - C = \{1, 3, 5\}$$

$$B - C = \{5, 7, 9\}$$

$$C - A = \{8, 10\}$$

SUSCRÍBETE

¡ES GRATIS!

$$A' = \{ \underline{1}, \underline{4}, \underline{6}, \underline{8}, \underline{9}, \underline{10} \}$$

$$B' = \{ \underline{1}, \underline{3}, \underline{5}, \underline{7}, \underline{9} \}$$

$$C' = \{ \underline{2}, \underline{4}, \underline{6}, \underline{7}, \underline{8}, \underline{9}, \underline{10} \}$$

$$C' = \{ \underline{a}, \underline{e}, \underline{o} \}$$

$$I' = \{ x | x \text{ is prime} \}$$

$$(A \cup B) \cap C = \{ 5, 6, 8 \}$$

$$\{ 1, 2, 3, 4, 5, 6, 8, 10 \}$$

$$(B \cap C) \cup (A \cap B) = \{ 2, 4, 6, 8 \}$$

6, 8
2, 4, 6

$$(A \cap B) \cup C = \{ 2, 4, 5, 6, 7, 8, 9 \}$$

$$(A \cap C) \cap (B \cup C) = \{ 5, 6 \} \checkmark$$

$$A' - B = \{f\}$$

e.g.

$$(A - C) = \{b, e, f, g\}$$

a, c, d

$$(B \cup C)' = \{a, c, f\}$$

$$(A \cup B) \cap (C' - A') = \{a, c, d\}$$

$\{a, b, c, d, e, g\} \cap$

$$C' = \{a, c, d, f\}$$

$$A' = \{e, f, g\}$$

$$C' - A' = \{a, c, d\}$$

$$A \Delta B = \{1, 2, 4, 5, 7, 8, 9, 12\} \checkmark$$

$$A \Delta C = \{0, 1, 4, 6, 8, 11\} \checkmark$$

$$B \Delta C = \{0, 2, 5, 6, 7, 9, 11, 12\} \checkmark$$

$$B \Delta D = \{0, 2, 3, 4, 8, 9, 10\} \checkmark$$

$$C \Delta D = \{3, 4, 5, 6, 7, 8, 10, 11, 12\} \checkmark$$

$$A \Delta D = \{0, 1, 3, 5, 7, 10, 12\} \checkmark$$