

The background is a dark blue gradient with abstract white geometric patterns. On the left side, there is a large circular scale with degree markings from 150 to 260. Several concentric circles and arcs are scattered across the image, some with arrows indicating a clockwise direction. The overall aesthetic is technical and modern.

INEL 4076

CHAPTER 7 – 7.3 INTRODUCCION A LOGICA BOOLEANA

CONCEPTOS DE LOGICA BOOLEANA

- AND Gate relations

- $AA = A$
- $A1 = A$
- $A0 = 0$
- $AB = BA$
- $A\bar{A} = 0$
- $A(BC) = (AB)C = ABC$

- OR Gate relations

- $(A + B) + C = A + (B + C) = A + B + C$
- $A(B + C) = AB + AC$
- $A + 0 = A$
- $A + 1 = 1$
- $A + \bar{A} = 1$
- $A + A = A$

- NOT Gate relations

- $\bar{\bar{A}} = A$ Ley de DeMorgan

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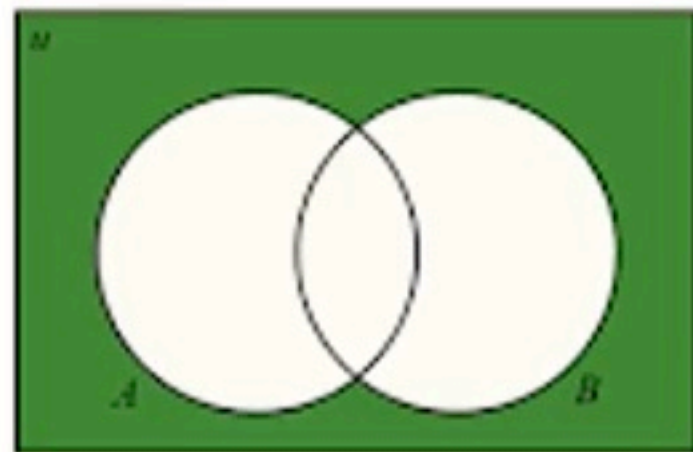
LEY DE DEMORGAN USANDO DIAGRAMAS DE VENN

De Morgan's Law



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

$$\overline{AB} = \bar{A} + \bar{B}$$



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

$$\overline{A + B} = \bar{A}\bar{B}$$

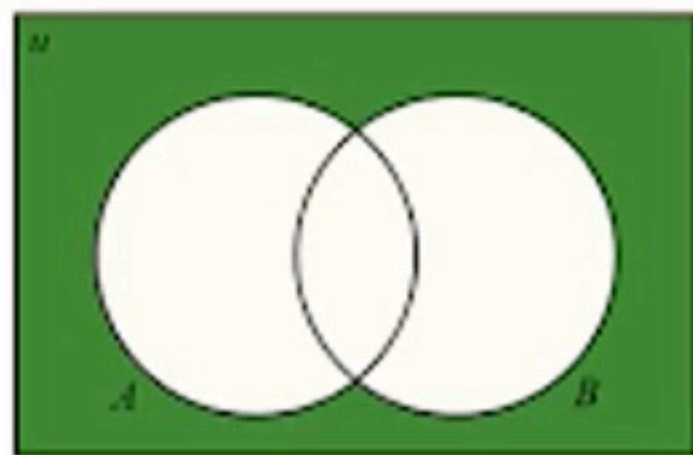
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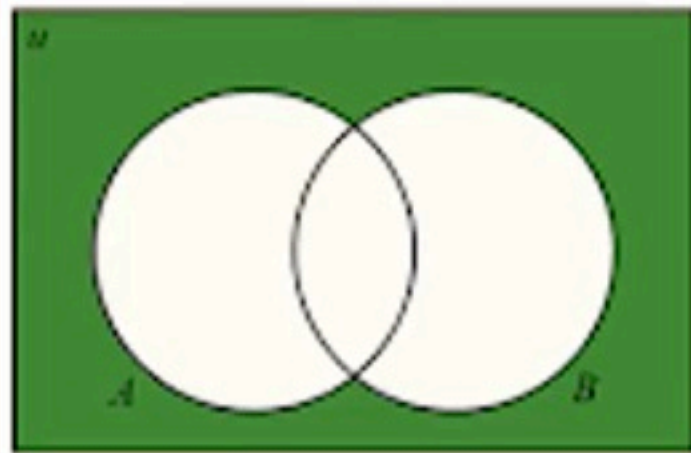
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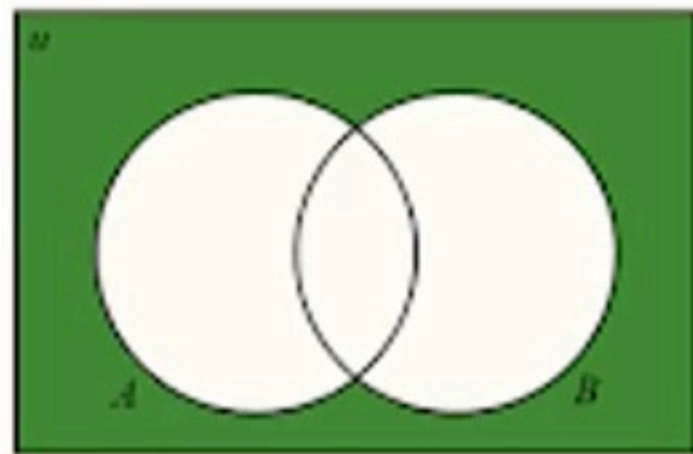
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$$A + B = \overline{\overline{A} \overline{B}}$$

OTRAS LEYES CURIOSAS

- $A + AB = A$
- $A(A + B) = A$
- $A + \bar{A}B = A + B$
- $A(\bar{A} + B) = AB$
- $(A + B)(A + C) = A + BC$

FORMA CANÓNICA : SOP – SUM OF PRODUCTS

A	B	C	F
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

$$F = \bar{A}BC + A\bar{B}C + AB\bar{C} + ABC$$


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0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

$$\bar{F} = \bar{A}\bar{B}\bar{C} + \bar{A}\bar{B}C + \bar{A}B\bar{C} + A\bar{B}\bar{C}$$


$$F = \bar{\bar{F}}$$

$$F = (A + B + C)(A + B + \bar{C}) \\ (A + \bar{B} + C)(\bar{A} + B + C)$$