

## ALGEBRA DE CONJUNTOS

### 1) Ley Involutiva

$$(A')' = A$$

### 2) Ley Idempotencia

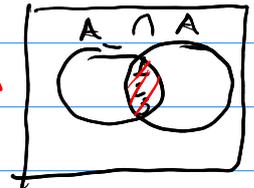
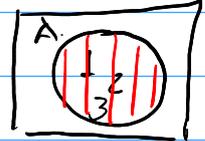
$$A \cup A = A$$

$$A \cap A = A$$

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

$$A \cup A = \{1, 2, 3\}$$

$$A \cap A = \{1, 2, 3\}$$



### 3) Ley Conmutativa

$$A \cup B = B \cup A$$

$$A \cap B = B \cap A$$

### 4) Ley Asociativa

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

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

### 5) Ley distributiva

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

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

### 6) Ley Morgan

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

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

### 7) Ley de la diferencia

$$A - B = A \cap B'$$

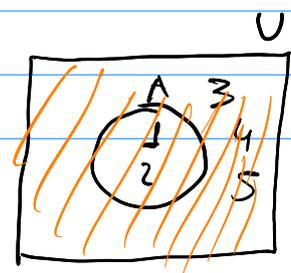
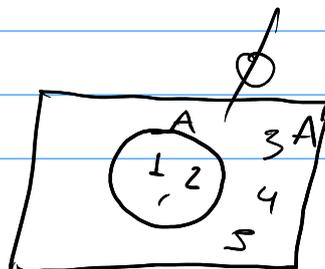
$$U = \{1, 2, 3, 4, 5\}$$

$$A = \{1, 2\}$$

### 8) Ley de complemento

$$A \cup A' = U$$

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



9) Ley de la unidad

$$\begin{array}{ll} A \cup U = U & A \cap U = A \\ A \cup \emptyset = A & A \cap \emptyset = \emptyset \end{array}$$

10) Ley de absorción

$$\begin{array}{l} A \cup (A \cap B) = A \\ A \cap (A \cup B) = A \\ A \cup (A' \cap B) = A \cup B \\ A \cap (A' \cup B) = A \cap B \end{array}$$

$\leftarrow \frac{A \cup (A \cap B) \cup A}{A \cup A}$   
 $A$