HW 1

Sunday, 5 October 2025 11:51

Exercise 2.15. ☀ ✍

Let's consider a propositional langiage where

- A ="Angelo comes to the party",
- B ="Bruno comes to the party",
- C ="Carlo comes to the party",
- D ="Davide comes to the party".

Formalize the following sentences:

1. "If Davide comes to the party then Bruno and Carlo come too"
2. "Carlo comes to the party only if Angelo and Bruno do not come"
3. "Davide comes to the party if and only if Carlo comes and Angelo doesn't come"
4. "If Davide comes to the party, then, if Carlo doesn't come then Angelo comes"
5. "Carlo comes to the party provided that Davide doesn't come, but, if Davide comes, then Bruno doesn't come"
6. "A necessary condition for Angelo coming to the party, is that, if Bruno and Carlo aren't coming, Davide comes"
7. "Angelo, Bruno and Carlo come to the party if and only if Davide doesn't come, but, if neither Angelo nor Bruno come, then Davide comes only if Carlo comes"

Using P(x,y) to say you can fool x at time y, express the famous quote by Abraham Lincoln:
You can fool some of the people all of the time, and all of the people some of the time, but you can not fool all of the people all of the time.

Задача 3. Дайте пример за множества A, B и C, такива че:

1. $A \in B$, $B \in C$, $A \notin C$.
2. $A \subseteq B$, $B \subseteq C$, $A \in C$.
3. Всеки елемент на A е подмножество на A.

Задача 5. Верни ли са следните твърдения:

1. Ако $A \subseteq B$ и $B \subseteq C$, то $A \subseteq C$.
2. Ако $A \subseteq B$ и $C \subseteq B$, то $A \subseteq C$.
3. Ако $A \subseteq B$, то $A \subset B$ или $A = B$.

4. Ако $A = B$, ако нито $A \subset B$, нито $B \subset A$.

5. Ако $A \subseteq B$ и $B \subset C$, то $A \subset C$.

6. Ако $A \subset B$ и $B \subseteq C$, то $A \subset C$.

Q.8 The number of elements in the power set of {0, 1, 2, ..., 6} is _____.

(a) 1024 (b) 4096

(c) 512 (d) 128