



# **CS 228 : Logic in Computer Science**

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# Recap of Basics

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- ▶ A disjunction of literals  $L_1 \vee L_2 \vee \dots L_n$  is valid iff ...
- ▶ A conjunction of literals  $L_1 \wedge L_2 \wedge \dots L_n$  is satisfiable iff ...



# Normal Forms : CNF Validity

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Let  $\varphi = C_1 \wedge C_2 \wedge \dots \wedge C_n$  be in CNF.

- ▶ Checking if  $\varphi$  is satisfiable is NP-complete.
- ▶ Checking if  $\varphi$  is valid is polynomial time. Why?
- ▶ Question raised in class : If validity is polytime, so should be satisfiability. Is this true?