

# Propositional Calculus Rules

- **Joining:** from **A** and **B** we can make  $\langle \mathbf{A} \wedge \mathbf{B} \rangle$
- **Separation:** from  $\langle \mathbf{A} \wedge \mathbf{B} \rangle$  we can make both **A** and **B**
- **Double-tilde:**  $\sim\sim$  can be inserted or deleted as long as the resulting string is well-formed
- **Fantasy:** if we can conclude **B** by starting from an assumption of **A**, then we can make  $\langle \mathbf{A} \supset \mathbf{B} \rangle$
- **Carry-over:** in a fantasy, we can use anything already made before
- **Detachment:** from **A** and  $\langle \mathbf{A} \supset \mathbf{B} \rangle$  we can make **B**
- **Contrapositive:**  $\langle \mathbf{A} \supset \mathbf{B} \rangle$  is interchangeable with  $\langle \sim\mathbf{B} \supset \sim\mathbf{A} \rangle$
- **DeMorgan:**  $\langle \sim\mathbf{A} \wedge \sim\mathbf{B} \rangle$  is interchangeable with  $\sim\langle \mathbf{A} \vee \mathbf{B} \rangle$
- **Switcheroo:**  $\langle \mathbf{A} \vee \mathbf{B} \rangle$  is interchangeable with  $\langle \sim\mathbf{A} \supset \mathbf{B} \rangle$