# Inference

- Universal Instantiation: $\forall v : f(v) \vDash f(g)$: $\{v/g\}$ (replacement)
- Existential Instantiation: $\exists v : f(v) \vDash f(C)$: $\{v/C\}$
  - introduce new constant or new constant function
    $\forall x \exists y : f(x, y) \vDash f(x, F(x))$
- Unification: $f(x, C) \,|\, f(A, y) = \{x/A, y/C\}$
- Most general unifier

# Resolution in first order logics

- Eliminate biconditionals and implications
- Apply De Morgan rules
- Standardize apart variables
- Skolemize all existential instantion
- Drop universal quantifiers
- To CNFs
- Resolution by instantiation