→ Create a knowledge base consisting of first order logic statements and prove the given query using forward reasoning

→ Forward Reasoning Algorithm :

Function FOL-FC-Ask(KB, α) returns a substitution or false

input : KB, the knowledge base, a set of first order definite clauses α, the query an atomic sentence

local variable : new, the sentence inferred on each iteration

repeat until new is empty
new ← { }
for each rule in KB do
(p1 ∧ ... ∧ pn => q) ← Standardize-Variable (rule)
for each θ such that SUBST(θ, p1 ∧ ... ∧ pn) = SUBST(θ, p'1 ∧ ... ∧ p'n)
for some p'1, ..., p'n in KB
q' ← Subst(θ, q)
if q' does not unify with some sentence already in KB or new then.
add q' to new
φ ← Unify(q', α)
if φ is not fail then return φ
add new to KB
return false.