Problem Description
People who get injured in road accidents are taken to hospital unless the injuries are not serious. A hospital provides adequate treatment for injured people only if they have proper health insurance. However, people who work at the hospital do not take health insurance. The cost of treatment is higher for those who do not work in the hospital. John Murphy involved in a car accident and had serious injuries. He was given adequate treatment in a hospital and his cost of treatment was lower. Derive a contradiction from the given facts.

Rewrite them in formal statements:
∀ p : Person • seriouslyInjured(p) ⇒ takenToHospital(p) (1)
∀ p : Person • provideTreatment(p) ∧ takenToHospital(p) ⇒ hasHealthInsurance(p) (2)
∀ p : Person • workInHospital(p) ⇒ ¬ hasHealthInsurance(p) (3)
∀ p : Person • ¬ workInHospital(p) ⇒ costOfTreatmentHigher(p) (4)
∃ p : Person • p = JohnMurphy ∧ seriouslyInjured(p) ∧ provideTreatment(p) ∧ ¬ costOfTreatmentHigher(p) (5)

Applying One-point-rule to (5), derive

seriouslyInjured(JohnMurphy) ∧ provideTreatment(JohnMurphy) ∧ ¬ costOfTreatmentHigher(JohnMurphy) (6)

Using Conjunctive simplification on 6, derive

seriouslyInjured(JohnMurphy) (7)
provideTreatment(JohnMurphy) (8)
¬ costOfTreatmentHigher(JohnMurphy) (9)

Using (1), (7) and Modus Ponens, derive
takenToHospital(JohnMurphy) (10)

Using (8), (10) and Conjunctive addition, derive
takenToHospital(JohnMurphy) ∧ provideTreatment(JohnMurphy) (11)

Using (11), (2) and Modus Ponens, derive
hasHealthInsurance(JohnMurphy) (12)

Using (9), (4) and Modus Tollens, derive
¬ (¬ workInHospital(JohnMurphy) (13)
Using (13) and Double Negation, derive
workInHospital(JohnMurphy) (14)

Using (14), (3) and Modus Ponens, derive
¬ hasHealthInsurance(JohnMurphy) (15)

(12) and (15) are contradictory to each other because (12) indicates John Murphy has health insurance but (15) indicates he does not have health insurance.