

Proof by Resolution for a Logic problem

1. Convert the following six statements into First Order Logic (FOL). Translate the obtained expressions to Conjunctive Normal Forms (CNFs, Steps 1-6 of Lecture 9).

1. You have a dog.
2. Amy buys cat food.
3. Anyone who owns a cat hates anything that chases any cat.
4. Every dog chases some cat.
5. Anyone who buys cat food owns a cat.
6. Someone who hates something owned by another person will not marry that person.

2. Transform the following conclusion into FOL, negate it and convert it to CNF (Steps 1-6 of Lecture 9: Logic).

Amy will not marry you.

3. Based on all the previously created CNFs, finalise the conversion to CNF (Steps 7-8 of Lecture 9) and prove the statement from 2.