Chapter 4. Search in Complex Environments

Exercise 1

Give the name of the algorithm that results from each of the following special cases:

1. Local beam search with k=1.

2. Local beam search with one initial state and no limit on the number of states retained.

3. Simulated annealing with T=0 at all times (and omitting the termination test).

4. Simulated annealing with T=∞ at all times.

5. Genetic algorithm with population size N=1.

Chapter 5. Knowledge-Based Agents

Exercise 15

Use resolution to prove the sentence ¬A∧¬B from the following clauses.

S1: $A \Leftrightarrow (B \vee E)$.
S2: $E \Rightarrow D$.
S3: $C \wedge F \Rightarrow \neg B$.
S4: $E \Rightarrow B$.
S5: $B \Rightarrow F$.
S6: $B \Rightarrow C$

Exercise 7 (nqueens-size-exercise)

Which of the following are valid (necessarily true) sentences?

1. $(\exists x\ xx) \Rightarrow (\forall y\ \exists z\ yz)$.
2. $\forall x\ P(x) \vee \neg P(x)$.
3. $\forall x\ Smart(x) \vee (xx)$.