Midterm Review

CMPT 310
Midterm

Tuesday October 14
  - in class 12:30-1:30

Approximately 4 questions (with subparts)

One additional multiple choice question
  - can be completed anytime 7:00am-7:00pm
  - very important
Format

Approximately 4 questions (with subparts)

Two broad types:
- Apply algorithm $A$ to problem $P$ (denoted by $A$)
- Discuss \{tradeoffs, assumptions, relative merits\} of \{algorithms, problem formulations, models\} (short answer)

Allowed 1 page (8.5” x 11” each) cheat sheet
Intelligent Agents

♦ Definitions of AI
♦ Rationality
♦ PEAS descriptions
♦ Environment types
♦ Agent types
Search

◊ Understand different problem types and strategies for solving each of them

◊ Naive search algorithms, tradeoffs and advantages/disadvantages of each

◊ Heuristic search algorithms, why and how they work, advantages/disadvantages

◊ Iterative improvement algorithms (hill climbing)
Constraint Satisfaction Problems

♦ Relationship to search problems
♦ Heuristics for solving
♦ Apply heuristics to problems A
♦ Algorithm for arc consistency A
Game Playing

- Minimax search
- \( \alpha-\beta \) pruning
- Apply these algorithms to game trees
Propositional Logic

◇ Models and entailment

◇ Inference algorithms
  – Enumeration
  – Forward/backward chaining
  – Resolution proof

◇ Horn clauses

◇ CNF