

The quiz will be cumulative, but emphasize material covered from just before the previous quiz until now, including material covered on Assignment 2. review the assignment solutions and class handouts (on the hex game page: 396 handout, 396 hexnotes (p1, p2), mcts hex example)

1. scoring Go positions, tictactoe, minimax

understand the Trump-Taylor scoring rule: what is the score if play stops now? what is the score if play continues, and both players play perfectly?

tictactoe: discuss the reduction in the search space that results from minimax to alphabeta, and then with adding isomorphism checking, and then with adding transposition checking

2. nim game: discuss how the search space was minimized with memoization. the nim formula was more efficient than memoization: why don't we use the formula approach for more games, like say chess or hex or go?

3. review the properties of the game of hex that are useful to keep in mind when writing a hex player or solver.

inferior cell analysis: understand dead cell, captured cell. understand how to easily recognize some dead or captured cells. explain how this helps a hex player or solver.

explain why filling in captured cells (for the appropriate player) does not change the outcome of a game.

virtual connections: explain the difference between a full connection and a semi-connection. explain why the 7652 pattern gives a full connection. explain why the 432 pattern gives a full connection.

what is mustplay analysis? give a simple example. use mustplay analysis to solve a simple hex puzzle.

4. mcts: understand pure mcts. be able to trace a small mcts example.