1. read the course webpage https://webdocs.cs.ualberta.ca/~hayward/355/jem/355.html and answer these questions
   - what games/puzzles might be covered this semester? why are they in three groups?
   - what usually happens to students who do not do the homework in this class?

2. Watch the AlphaGo movie on Netflix or youtube (closed-caption option has English subtitles) and answer questions below.
   https://www.youtube.com/watch?v=WXuK6gekU1Y&feature=youtu.be
   - According to Demis Hassabis, why are virtual environments and games the perfect platform for testing artificial intelligence algorithms? (answer around minute 2)
   - What is the first game DH shows in his talk?
   - According to DH, what is the significance of building a superhuman go-bot?
   - What are Fan Hui’s go qualifications?
   - True/false: Aja Huang did a postdoc at UAlberta, working with Martin Müller on go for 6 months and Ryan Hayward on hex for 6 months? (answer is not in the movie)
   - Why do you think Lee Sedol did not reach out to any computer go expert — e.g. Müller — while he was preparing for the AlphaGo match? (answer is not in the movie)
   - What to you was the most interesting part of the movie?

3. Read this hex intro (from a new book to be published by Math Association of America). Can you answer all questions? Can you solve all the puzzles?

4. Read the Tromp-Taylor rules for go
   http://tromp.github.io/go.html
5. For a go position and a point and a color (black, white, or empty), the group or block or string of that point and color is the connected component of same-color points that can be reached from that point. E.g. in the diagram, the black group containing h1 is the set of black stones \{h1,h2,h3,h4,i2,i4\}; the white group containing a7 is the set of white stones \{a7\}; the empty group containing h6 is the set of empty points \{h6,i5,i6,i7\}.

Give the number of black groups, white groups, empty groups, black stones, white stones, black territory, white territory and the final Tromp-Taylor score if the game ends now.

From this position, is a black move to i3 suicide?
(Answer: it’s not suicide, because after placing this stone the black group at i3 has 7 stones and 5 liberties, g1,g2,g3,i5,i1. Since the group containing the placed stone has at least one liberty, the move is not suicide.)

From this position, assuming Tromp-Taylor no-suicide rules, is a black move to i3 legal?
(Answer: we need to know the complete game history to answer this question. First, the move is not suicide, so we are allowed to place it. Second, we now need to check the superko condition: has this position occurred in the game before? If yes, then the move is not legal, because it violates the Tromp-Taylor positional superko rule. If no, then yes, this move is legal.)

6. Work through all exercises in Interactive Way to Go, and fundamentals and basics at online-go.com:

//playgo.to/iwtg/en https://online-go.com/learn-to-play-go