1. **Front:** What is an information set?

2. **Back:** Set of nodes that are indistinguishable to a player;

3. **Front:** Report an example of one 2-players game with perfect information and one with imperfect information in extensive form representation;

4. **Back:**

5. **Front:** Report an example of one 2-players game with perfect recall and one with imperfect recall in extensive form representation;

6. **Back:**

7. **Front:** Report the definition of timeable extensive form game;

8. **Back:** A game is timeable if and only if all its information sets are chronologically ordered

9. **Front:** Report an example of a game with perfect recall that is not timeable

10. **Back:**

11. **Front:** Provide the definition of the normal form representation of a game, including games with Nature;

12. **Back:** Given an extensive form game $(N, A, T, \iota, \rho, \chi, U, H)$, its normal form representation is the tuple (N, P, U'), where:

    - N is the set of strategic players
    - P is the set of sets of plans, where P_i is the set of plans available to player i
    - P_i specifies one action $a \in A_i$ for each information set h belonging to H_i such that $a \in \rho(h)$
    - U is the set of utility functions corresponding to each player
    - $U_i : P_1 \times P_2 \times \ldots \times P_n \to \mathbb{R}$ is a function returning the utility of player i given a plan profile p resulting in terminal node $U(w)$, where w is the terminal node reached by following the plan profile p

13. **Front:** Given an extensive form game with 2 players, h information sets per player, and 2 actions per information set, what is the asymptotical size of the normal form representation?

14. **Back:** 2^{2h}

15. **Front:** What is the definition of a strategy and a strategy profile in a normal form game?

16. **Back:** A strategy in a normal form game is a function $\sigma_i : P_i \to [0, 1]$ returning the probability of player i playing a given plan (in P_i).
A strategy profile is a tuple $(\sigma_1, \sigma_2, \ldots, \sigma_n)$ containing a strategy for each player

17. **Front:** What is the definition of the reduced normal form representation of an extensive form game?

18. **Back:** Given a normal form representation of the extensive form game, the reduced normal form representation is the tuple (N, P', U') where:

    (a) N, U' are the same as in the normal form representation

    (b) $P' \subseteq P$ such that no two plans belonging to the same player in P' are realization equivalent, and any plan in P not included in P' is realization equivalent to a plan in P'

19. **Front:** Given an extensive form game with 2 players, h information sets per player, and 2 actions per information set, what is the asymptotical size of a reduced normal form representation?

20. **Back:** 2^{2h} (same as non-reduced normal form)

21. **Front:** What is the expected utility of a player in a normal form game?

22. **Back:** Given a strategy profile σ, the expected utility of player i is $\sum_{n=1}^{n} \sigma_i(p) U_i(p)$

23. **Front:** Provide the definition of a sequence form representation of an extensive form game (with Nature);

24. **Back:** Given an extensive form game $(N, A, T, \iota, \rho, \chi, U, H)$, its sequence form representation is the tuple (N, Q, U', C) where:

    - N is the set of strategic players
    - Q is the set of sets of sequences, where Q_i is the set of sequences available to player i
    - U' is the set of utility functions U'_i, where each U'_i returns the utility obtained by the terminal node reached by the sequence profile q
    - C is the set of constraints $\{(F_i, f_i)\}$ over the sequence form strategy of all players

25. **Front:** Given an extensive form representation of a game with 2 players, h information sets per player, and 2 actions per information set, what is the asymptotical size of the sequence form representation?

26. **Back:** 2^{2h} i.e., the sequence form representation of an extensive form game is linear in the number of nodes

27. **Front:** What is the definition of a sequence form strategy and a sequence form strategy profile in a sequence form game?

28. **Back:** A sequence form strategy (realization plan) r_i is a function $r_i : Q_i \to [0, 1]$ returning the probability of player i playing a given sequence (in Q_i).
    A sequence form strategy profile is the joint strategy $(r_1, r_2, \ldots, r_n)$.

29. **Front:** What is the expected utility of a player in a sequence form game?

30. **Back:** $\sum_{q_1 \in Q_1} \sum_{q_2 \in Q_2} \dots \sum_{q_n \in Q_n} \prod_{i=1}^{n} r_i(q_i) \cdot U(\mathbf{q})$

31. **Front:** Provide the statement for Kuhn's Theorem

32. **Back:** There exists at least one realization equivalent agent form strategy for each normal form strategy if the game has perfect information.

33. **Front:**