

# Imperfect-Information Extensive Form Games

Week 4

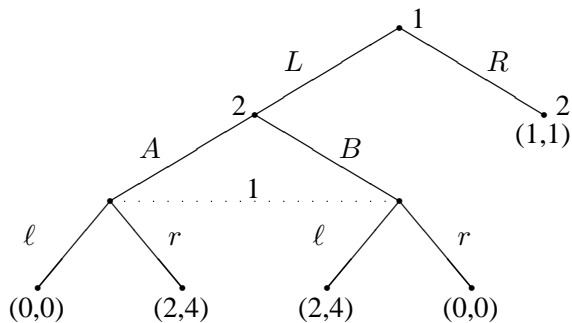
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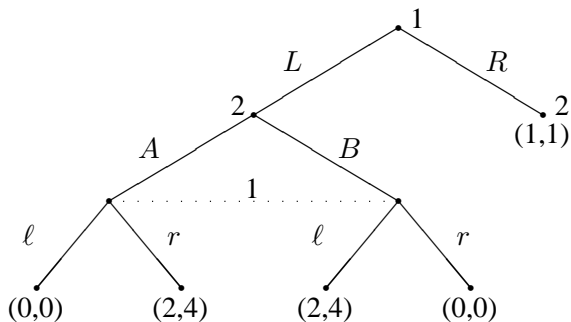
- What situations are modeled by these games?
- How do we define them?

# Example



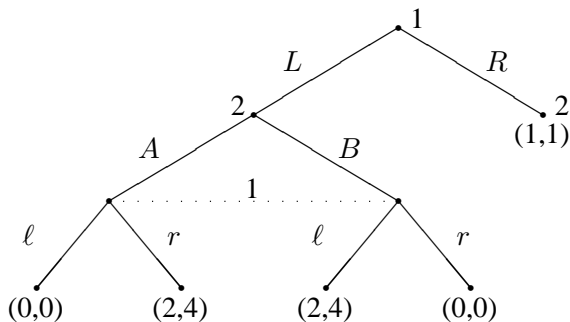
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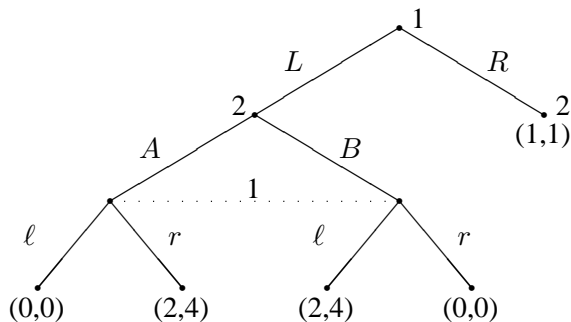
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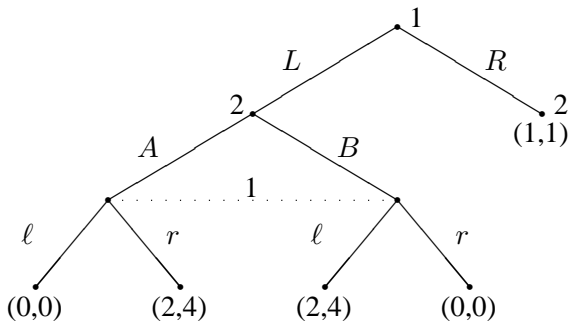
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- How do we define pure strategies in general?
- What is the induced NF?
- What is the reverse transformation?



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- What nice properties to such games have?
- Explain what it means to play a game of imperfect recall.
- How can behavioral and mixed strategies be different in such games?

# Computing Equilibria of Games of Perfect Recall

How can we find an equilibrium of an imperfect information extensive form game?

- One idea: convert to normal form, and use techniques described earlier.
  - Problem: exponential blowup in game size.
- Alternative (at least for perfect recall): **sequence form**
  - for zero-sum games, computing equilibrium is polynomial in the size of the extensive form game
    - exponentially faster than the LP formulation we saw before
  - for general-sum games, can compute equilibrium in time exponential in the size of the extensive form game
    - again, exponentially faster than converting to normal form