Midterm 1 Logistics

- Midterm 1 two weeks from now (Sep 18) in lecture venue
- **6:30-7:15pm (45 minutes). Plan to arrive early!**
- There will be a seating assignment (more details next week)
- **Bring your student ID**
- **Closed-book, closed-notes, no calculators or other electronic devices**
- Bringing your own scratch paper is not allowed
  - The exam will be printed one-sided
  - The entire back side plus some space on the front side can be used for scratch work
  - The last sheet of the exam will be entirely blank and can be torn off to use as additional scratch paper

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- Covers up to (and including) routing games
- Technical terms to know:
  - Normal-form game, Nash equilibrium, pure Nash equilibrium, strictly dominated strategy, action
  - First-price auction, second-price auction, VCG mechanism
  - Truthfulness/strategyproofness, total cost, maximum cost
  - Equilibrium flow, optimal flow, price of anarchy
  - (Non-atomic) routing game, atomic routing game

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- All questions except one will be answer-only (no proof)
- One proof question worth 6 points (out of 40)
  - Writing "Don't know" on this question guarantees 1 point
  - Partial credit will not be given away cheaply
- Type of questions similar to assignment questions
- Additional questions (from past two years' exams) posted on Canvas discussion forum
- **Tip:** Plan your time, and be careful with the calculations.
- We will have a half-lecture after the midterm

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- For questions that ask to find Nash equilibria, don't forget to answer in the **simplest form!**
- Example:
  - (Split, Steal)
  - (Steal, Split)
  - (p*Split + (1-p)*Steal, Steal) for any 0 <= p <= 1
  - (Steal, q*Split + (1-q)*Steal) for any 0 <= q <= 1
- Simplest form:
  - (p*Split + (1-p)*Steal, Steal) for any 0 <= p <= 1
  - (Steal, q*Split + (1-q)*Steal) for any 0 <= q <= 1