

## Part I (due at the beginning of class Monday, November 3, 2025)

Read Chapter 6. When you get to the end of the first paragraph on page 33 **BEFORE YOU READ ANY FURTHER**, answer the first reading question (which is the last sentence of that paragraph). Absolutely no judgment for your answer here, but it will be interesting for you to answer before reading any of the various positions people take on this game.

Remember that what you turn in for Part I should have 3 parts, as mentioned in the syllabus:

- (a) Your responses to the reading questions below.
- (b) Your own questions/comments on the reading.
- (c) The amount of time you spent on Part I (including the time spent reading).

### Reading Questions

- 1. Which strategy do you choose and why?
- 2. Chapter 6 Exercise 3

## Part II: Exercises (prepare for class Monday, November 3, 2025)

- 1. Create a matrix game that is  $3 \times 2$  and all three lines for Rose's strategies intersect at the same point in the graph. Solve your game.
- 2. Chapter 3 Exercise 7
- 3. Chapter 3 Exercise 6
- 4. Chapter 5 Exercise 2

## Part III: Homework Problems (due Wednesday, November 5 at the beginning of class)

- 1. Consider the zero-sum game of Rock–Paper–Scissors. Suppose that in any one round, the winner of the round gets 10 points.
  - (a) Create a payoff matrix for this game.
  - (b) Suppose Colin plays Rock 40% of the time, Scissors 30% of the time, and Paper 30% of the time. What strategy should Rose choose and why?
  - (c) Solve this game using the method of equalizing expectations.
  - (d) Now modify the game so that Rose gets a bonus when she wins with Rock—in that particular case, she wins 20 points instead of 10. With this single change to the game, what happens when we solve it by equalizing expectations? Solve the new game, and explain any differences you see.

## Portfolio Assignment

Create a Guide to Matrix Games section and summarize all the things we learned about matrix games. Create your own examples to illustrate each item. (Note that we're not done with matrix games yet, so you will continue adding to this section.)