

4. There are five cards facing down: Ace, King, Queen, two, and a three. If you get the Ace, you win 2 chips. If you get either the King or Queen, you win 1 chip. If you get the Two, you lose 2 chips. If you get the three, you lose 3 chips. Pair up with a friend for this activity. How much do you expect to win or lose after 30 games? [Note: Make sure the cards are mixed properly for each round]

5. You roll 2 dice. IF you get doubles, you win 6 chips. If the two numbers are consecutive, you win 1 chip. With any other outcome, you lose 2 chips. How much do you expect to win or lose after 40 games? Pair up with a friend for this activity:

6. Suppose you are the organizer of this following game: A die is rolled. If an even number is rolled, the player loses 1 chip. If he rolls a 1, they win 1 chip. If he rolls a 3, they LOSE 3 chips. Now, suppose he rolls a 6, they win a certain number of chips. What number should you make it, so that it is as big as possible, and still have a negative expected value?

7. Albert and Brad both work at the same company but take different types of transportation. Each person can either be “early” for work, “on time”, or “late” for work. If they are both “early” then both of them will get 3 points. If they are both “on time” then they get 1 point each. If they are both “late”, then they lose 2 points each. If only one of them is late, then they both lose 1 point. How many points should you expect for each person after 20 days. Create a simulation for this scenario. Pair up with a friend and perform the simulation 20 times.