

The professor gives Ann and Bob a game to play. They can devise a strategy together. After they devise their strategy, they will be sent to separate rooms where they cannot communicate in any way. Their goal is to make as much money as possible as a team.

After they go to the rooms, the game works like this: The professor flips a standard, fair coin in each room. He lets each player know the outcome (“Heads” or “Tails”) of his/her own coin. Each player then has to write down a guess about the outcome of the coin in the *other* room. If *both* of them guess the other player’s coin toss correctly, they get \$1000 (split equally between them). Otherwise, they both get nothing. What is an optimal strategy for Ann and Bob (which maximizes their joint expected earnings), and what are the expected total winnings they can make together? What is the strategy that *minimizes* their joint winnings?