Part II: Write your solutions in the space below each problem.

1. Kunal and Liying play a game in which Kunal flips 2 fair coins, and Liying flips 3 fair coins. Represent each outcome of the game as a pair (K, L) where K is the number of heads Kunal gets, and L is the number of heads Liying gets.

   - If Liying flips more heads than Kunal (or $K < L$), then Kunal has to give Liying \$2.
   - If Kunal flips more heads than Liying (or $K > L$), then Liying has to give Kunal \$4.
   - If they both flip the same number of heads (or $K = L$), then Liying has to give Kunal \$1.

   For example, the outcome $(2, 1)$ means that Kunal flipped two heads and Liying flipped one ($K > L$), so Liying would pay \$4 to Kunal.

[2] (i) Consider the event that Liying flips more heads than Kunal, or $K < L$. Explicitly write out all outcomes where $K < L$. (Your answer should be a set consisting of ordered pairs.)

Solution: The event $K < L$ has elements $\{(0,1), (0,2), (0,3), (1,2), (1,3), (2,3)\}$.

[3] (ii) Compute the probability that Kunal flipped fewer heads than Liying, or $P(K < L)$.

Solution: