A: Social choice = decisions involving more than one decision maker. E.g. voting
Q: What are Utils?
A: Utils are number we use to reflect our preferences over outcomes
A: \( a \) is the degree of optimism, where \( 1 = \) maximal optimism.
Q: Explain the following 3 principles.

i) Principle of maximising expected monetary value

ii) Principle of maximising expected value

iii) Principle of maximising expected utility
St Petersburg Paradox is where a fair dice is tossed repeatedly until tail appears. You win $2^n$, where n is no. of tosses that are not tails when you play.

How much would you pay to play this game? Here the paradox lies wherein that the expected value of the game is infinity but in reality people maximise expected utility and would pay about $4.
Q: What are the 4 Von Neumann-Morgenstern axioms?
A: If it is false that \( x > y \) and false that \( y > z \), then it is false that \( x > z \).
A: Its expected profit should be zero.
, max the sum of total utility.
, believe equality should be taken into account in the decision making process.
A Social welfare function is any decision rule aggregating a set of individual preference orderings. E.g. Majority rule
Q. Draw the decision matrix for BoS.
i) **strict**: an equilibrium action is strict if each player’s action is better than all her other possible actions

ii) **best response of player** $i$ = set of player $i$’s best actions
A player’s action ___________ dominates another action if the first action is at least as good as the second action, no matter what the players do.
A:

Perfect information: sequentially played game when each player knows all previous moves made by other players when making a decision. E.g. Chess

Imperfect information: while making a move, a player may not know at which branch of the game tree she is. E.g. matching pennies
Q: What is the difference between a strategic game with ordinal preferences and a strategic game with VnM preferences?
A: VnM preferences mean we can assign probabilities $p$ and $q$ to the deterministic outcomes.