

Week 4 quiz notes

Chapter 11: Making Decisions with Uncertainty

- Making decisions with uncertainty requires estimating the probabilities of various outcomes and incorporating them into decision-making models.
- Expected value is the sum of the probability-weighted values of all possible outcomes.
- Expected utility is the sum of the utility-weighted values of all possible outcomes, where utility is a measure of the desirability of an outcome.
- Risk-averse individuals prefer a certain outcome to an uncertain one with the same expected value, while risk-seeking individuals prefer an uncertain outcome with a higher expected value to a certain outcome.
- The expected value of perfect information is the increase in expected value that would result from having perfect information about the outcome probabilities.

Chapter 12: Auctions

- Auctions are a mechanism for allocating goods and services to the highest bidder.
- The four main types of auctions are the English auction, the Dutch auction, the sealed-bid first-price auction, and the sealed-bid second-price auction.
- The winner's curse occurs when the winner of an auction overpays for the item because they were too optimistic about its value.
- Auctions can be used to allocate a wide range of goods and services, including art, real estate, and government contracts.

Chapter 13: The Problem of Adverse Selection

- Adverse selection occurs when one party in a transaction has more information than the other and uses that information to their advantage.
- The lemons problem is an example of adverse selection in the used car market, where buyers have less information about the quality of the cars than sellers.

- Strategies for mitigating adverse selection include signaling, screening, and setting standards.
- Signaling involves sending a costly signal to reveal private information, such as obtaining a college degree to signal high ability.
- Screening involves using observable characteristics to sort individuals into different groups and offer different terms based on their risk level.
- Setting standards involves setting minimum requirements for quality or performance that must be met by all participants.

Chapter 14: The Problem of Moral Hazard

- Moral hazard occurs when one party in a transaction takes risks that are not fully borne by the other party, leading to excessive risk-taking.
- Principal-agent relationships are a common source of moral hazard, where the principal hires an agent to perform a task but cannot fully observe their actions.
- Solutions to moral hazard include monitoring, incentives, and risk-sharing.
- Monitoring involves observing and controlling the agent's behavior to reduce the likelihood of shirking or taking excessive risks.
- Incentives involve providing the agent with incentives that align with the principal's goals, such as performance-based pay or stock options.
- Risk-sharing involves sharing the risks and rewards of the task between the principal and agent, such as through profit-sharing agreements or insurance policies.