

Chapter 2 #1: What is meant by economic rationality? A person is rational if she can rank order preferences (both transitive and reflexive) and chooses her most preferred *feasible* alternative.

Chapter 2 #2: If people are rational, why are there stupid ads on TV that do not discuss the merit of the product? Aren't consumers just being persuaded to irrationally purchase goods? Advertising is geared to the person's aesthetic sensibilities and brand choice allows others to infer preferences of the purchaser. However, due to the rationalization that people have, advertising really is targeting those individuals at the margin. This means that advertising tries to capture the otherwise indifferent consumer of a competing brand. However, the effect is limited, especially in terms of prices.

Chapter 2 #3: What is the relationship between preferences and utility functions? Economists tend to formulate their discussion of preferences in terms of utility functions, which are a more concise method of characterizing preference relationships. Therefore, utility functions are a way to represent preferences.

Chapter 3 #1: What is the difference between a prescriptive and a descriptive theory? A descriptive theory describes how things are, while a prescriptive theory explains how things should be.

Chapter 3 #2: Explain Bentham's maximization of utilities approach. What desirable quality does it have? What are the problems with it? Bentham explains that society should create the greatest amount of happiness for the greatest number of people. This translates to maximizing the sum of utilities of everyone in society. More formally, if there are N individuals, society should maximize $U_1 + U_2 + \dots + U_N$, where U_i is the utility of the i th individual. The nice quality about it is that it treats different people the same – everyone's utility is weighted equally. However, the problem with it is that it requires a cardinal *interpersonal comparisons* of utility. That is, it not only requires us to measure a person's utility as one would measure a person's weight, it also requires us to compare one person's happiness to another.

Chapter 3 #5: Show that if an allocation maximizes the sum of utilities, then it is Pareto Optimal. In this question, it is important to note that any allocation that does not allocate all of the goods is not Pareto Optimal. Given that there is an allocation that uses all of the goods in order to maximize the sum of utilities, then that allocation is Pareto Optimal. This follows from the assumption of diminishing marginal utility. If I have a set of goods and need to allocate it to two people and I begin by allocating all of the goods to one person, we will have a Pareto Optimal allocation (considering all of the assumptions we made about each person being happy for each additional good he/she gets). However, when we move to a different allocation in which we give one good to the second person and all of the rest to the first person, we will still have a Pareto Optimal allocation but will have higher overall utility since the value of that one good to the second person is much more than its value to the first person. Following this logic, we can see that maximizing the sum of utilities will still lead to Pareto Optimality given that this can only be done by using all of the goods and dispersing them in a way that would maximize the overall utility.

Chapter 3 #6: Consider three different distributions (1, 2, and 3) of at most \$100 to 3 selfish people (X, Y, and Z), such that: Distribution 1 and distribution 2 are both Pareto Optimal, but neither is Pareto superior to the other. Distribution 1 is Pareto superior to distribution 3, but distribution 2 is not Pareto superior to distribution 3. Write out the distributions.

Distributions	X	Y	Z
1	\$100	\$0	\$0
2	\$40	\$40	\$20
3	\$99	\$0	\$0

Chapter 4 #4 What is cost-benefit analysis? This is a way to infer preferences from prices. The last amount paid for a good is the value of that good since if it is worth less, then the person would not have purchased it (assuming that the person is rational). If it were worth more, then the person would have purchased even more of the good until the last unit is worth the price that would be paid. In other words, if the benefit is greater than the cost, then one should undertake the activity.

Chapter 4 #5 How does one measure the value of clean air? The basic method of establishing the price of clean air is to use *hedonic pricing*. For example, observing how much more people pay for a house in a clean-air area over the identical house in an area with dirty air. The present value of clean air is reflected in the higher price for the house in the clean-air location.