

2. The Price System and the Micro Economy Pack

Part 1 – Consumer Theory

Syllabus Reference

a) Law of diminishing marginal utility	<ul style="list-style-type: none"> • its relationship to derivation of an individual demand schedule • equi-marginal principle • limitations of marginal utility theory; rational behaviour versus behavioural economic models
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You plan computer games for 10 hours write your additional satisfaction /10 for each hour

Simulating Diminishing Marginal Utility

Total Consumption	Additional Satisfaction (MU) (1-10)	Total Utility
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Examples of Diminishing Marginal Utility in your life

Ex. Mr. Snell plays 绝地求生 for five hours. The first hour is extremely interesting but, by the fifth hour, his eyes hurt, his memory of what he was reading decreased, and his enjoyment was much less.

1.

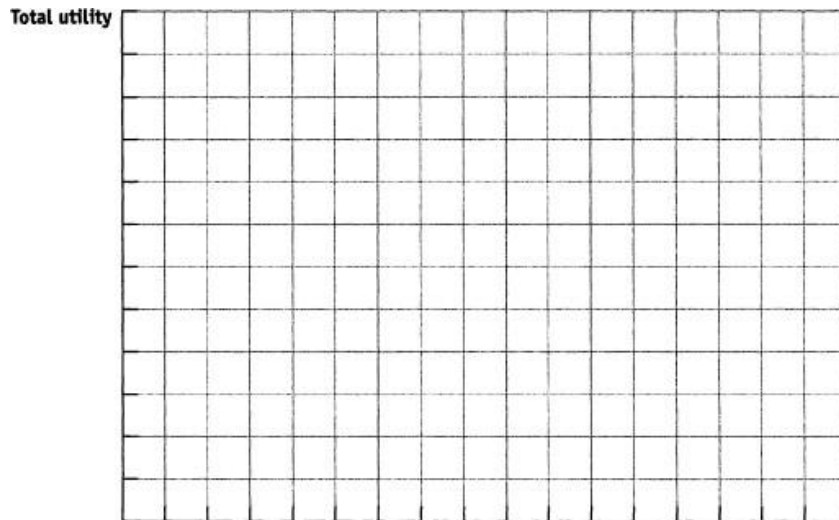
2.

3.

Equimarginal Principle

Consumption Bundle	Quantity of ice cream (cones)	Utility from ice cream (utils)	Quantity of hamburgers	Utility from hamburger (utils)	Total utility (utils)
A	0	0	5	53	53
B	2	38	4	48	86
C	6	84	2	28	112
D	8	92	1	15	107
E	10	95	0	0	95

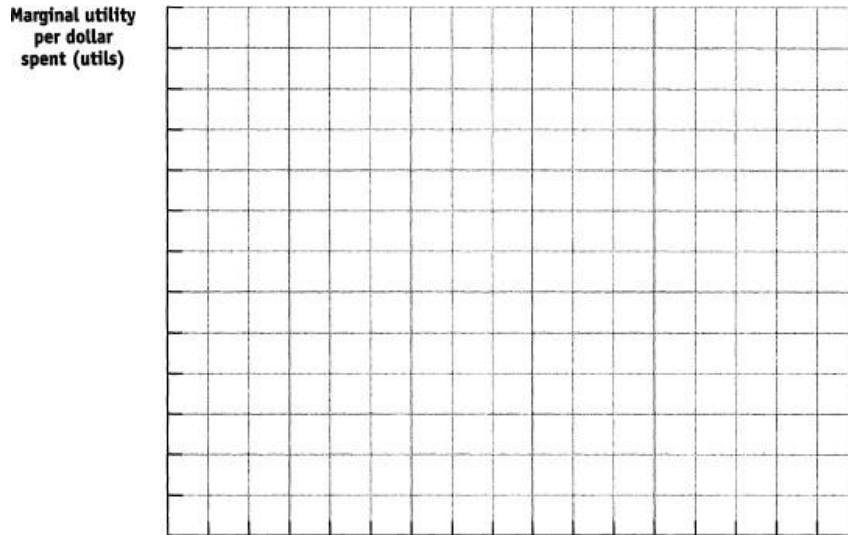
- a) In the graph below label the consumption bundles on the horizontal axis and label the total utility on the vertical axis. Calculate and plot the total utility. Note the point at which total utility is maximized.



- b) In the table below, calculate Adam's marginal utility per ice cream cone (MU_{ic}), his marginal utility per dollar spent on ice cream (MU_{ic}/P_{ic}), his marginal utility per hamburger (MU_h), and his marginal utility per dollar spent on hamburgers (MU_h/P_h). The price of ice cream is \$5 per cone and the price of hamburgers is \$10.

Ice Cream \$5				Hamburgers \$10			
Quantity of ice cream (Cones)	Total utility from ice cream (utils)	MU_{ic} (utils)	$\frac{MU_{ic}}{P_{ic}}$ (utils)	Quantity of hamburgers	Total utility from hamburgers (utils)	MU_h (utils)	$\frac{MU_h}{P_h}$ (utils)
0	0			0	0		
1	20	20	4	1	15	15	1.5
2	38			2	28		
3	53			3	39		
4	66			4	48		
5	77.5			5	53		
6	84	6.5	1.3				
7	89						
8	92						
9	94						
10	95						

- c) Draw a graph of Adam's marginal utility per dollar spent on ice cream and marginal utility per dollar spent on hamburgers. This graph's horizontal axis should be labeled with the possible consumption bundles while the vertical axis should measure Adam's marginal utility per dollar .



- d) Which is the optimal bundle of hamburgers and ice cream cones based upon Adam's income? Does it match with what you said in (a)? Explain.

Assume that the income of Wendy is \$24. Fill in the chart below and figure out Wendy's consumer equilibrium

Quantity	Pizza: $P_w = \$8$			Hamburgers: $P_r = \$4$		
	TU	MU	MU/P	TU	MU	MU/P
1	16			24		
2	28			44		
3	36			56		
4	40			64		
5	42			68		

Wendy's Consumer Equilibrium: _____

Diminishing Marginal Utility Revision

1 The table shows the marginal utility that a consumer obtains from consuming successive units of good X.

The price of good X is \$4. What additional information is needed to determine the quantity of X that the consumer will purchase?

- A the consumer's income elasticity of demand for good X
- B the consumer's price elasticity of demand for good X
- C the marginal utility of money to the consumer
- D the marginal utility that the consumer obtains from substitute goods

2 The table shows the marginal utility derived by a consumer who devotes the whole of his weekly income of \$32 to two goods X and Y, whose unit prices are \$2 and \$4 respectively.

unit	marginal utility of X (units)	marginal utility of Y (units)
1	9	28
2	8	26
3	7	24
4	6	22
5	5	20
6	4	18
7	3	16
8	2	14

In order to maximize his utility, which quantities of X and Y should the consumer purchase?

	X	Y
A	2	7
B	4	6
C	6	4
D	8	3

3 A utility-maximizing consumer spends his disposable income on food and clothing. When his weekly income is \$40 he buys 5 units of food at a unit price of \$5. His marginal utility from food consumption is 10 utility units.

If the price of a clothing unit is \$0.50, the consumer's marginal utility from clothing is
 A equal to that derived from food.

B $\frac{1}{10}$ utility unit.

C 1 utility unit.

D 10 utility units.

4 A household makes the following purchases of fruit.

fruit	quantity purchased (kg)	price
bananas		
apples		

The household derives twice as much utility from the fifth kg of bananas as from the tenth kg of apples. What should the household do to maximise utility from the purchase of these fruits?

	purchase of bananas	purchase of apples
A	increase	decrease
B	decrease	increase
C	increase	increase
D	no change	no change

5 A consumer allocates his expenditure between three goods, X, Y and Z. The table shows the prices of goods and the consumer's marginal utilities.

good	X	Y	Z
price (\$)	20	15	10
marginal utility (units)	40	30	15

How should the consumer's expenditure be reallocated in order to maximise his utility?

	X	Y	Z
A	more	more	less
B	more	less	more
C	less	more	less
D	less	less	more

6 The table shows the total utility that an individual derives from consuming different quantities of a good.

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