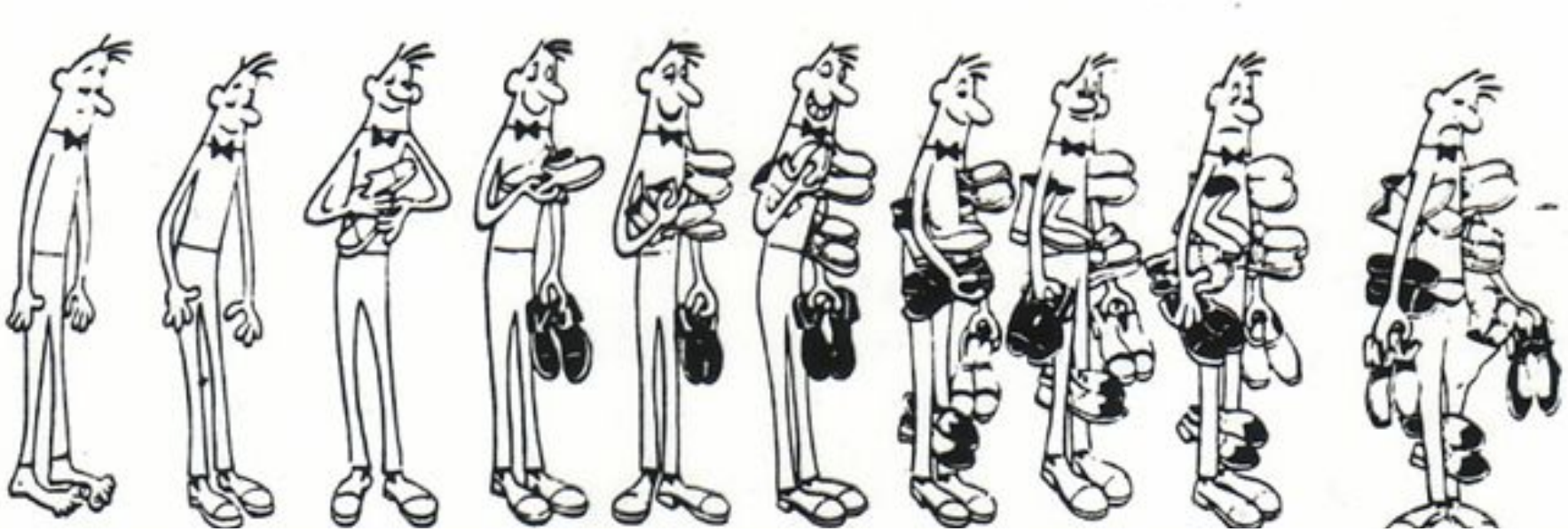
Unit 2:
Demand, Supply, and Consumer Choice

Consumer Choice and Utility Maximization



Calculate Marginal Utility

# of Slices of Pizza	Total Utility (in utils)	Marginal Utility/Benefit
0	0	
1	8	
2	14	
3	19	
4	23	
5	25	
6	26	
7	26	
8	24	

How many pizzas would you buy if the price per slice was $2?

Calculate Marginal Utility

# of Slices of Pizza	Total Utility (in dollars)	Marginal Utility/Benefit	Marginal Cost
0	0	0	$2
1	8	8	$2
2	14	6	$2
3	19	5	$2
4	23	4	$2
5	25	2	$2
6	26	1	$2
7	26	0	$2
8	24	-2	$2

How many pizzas would you buy if the price per slice was $2?

Calculate Marginal Utility

# of Slices of Pizza	Total Utility (in dollars)	Marginal Utility/Benefit	Marginal Cost
0			2
1			2
2			2
3			2
4			2
5			2
6			2
7			2
8			2

You will continue to consume until Marginal Benefit = Marginal Cost

How many pizza would you buy if the price per slice was $2?

CONSUMER BEHAVIOR

You plan to take a vacation and want to maximize your utility. Based on the info below, which should you choose?

Destination	Marginal Utility (In Utils)
Tahiti	3000
Chicago	1000

CONSUMER BEHAVIOR

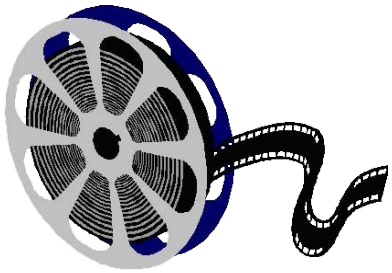
You plan to take a vacation and want to maximize your utility. Based on the info below, which should you choose?

Destination	Marginal Utility (In Utils)	Price	Marginal Utility Per Dollar
Tahiti	3000	$3,000	1 Util
Chicago	1000	$500	2 Utils

Calculating Marginal Utility Per Dollar allows you to compare products with different prices.

EXAMPLE: Would you rather eat at Jacko's or Taco Bell for lunch today? For dinner, Orcutt Burger or The Hitching Post?

$10



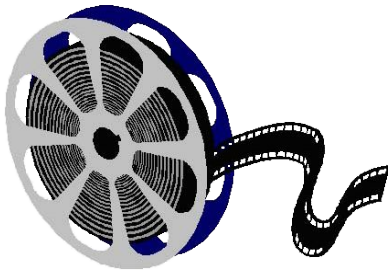
Utility Maximization

$5

# Times Going	Marginal Utility (Movies)	MU/P (Price =$10)	Marginal Utility (Go Carts)	MU/P (Price =$5)
1st	30		10	
2nd	20		5	
3rd	10		2	
4th	5		1	

If you only have $40, what combination of movies and go carts maximizes your utility?

$10



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3rd	10		2	
4th	5		1	

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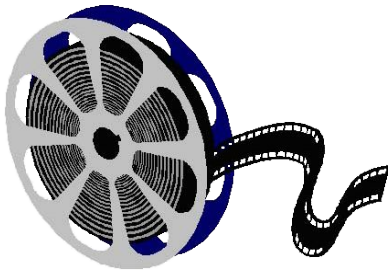

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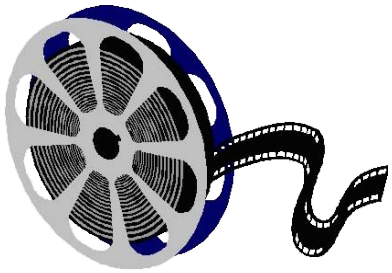


Utility Maximization

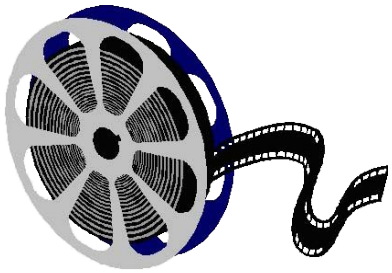
$5

# Times Going	Marginal Utility (Movies)	MU/P (Price =$10)	Marginal Utility (Go Carts)	MU/P (Price =$5)
1st	30	3	10	2
2nd	20	2	5	1
3rd	10	1	2	.40
4th	5	.50	1	.20

If you only have $40, what combination of movies and go carts maximizes your utility?

3 Movies and 2 Go Carts

$10



Utility Maximization

$5

# Times Going	Marginal Utility (Movies)	MU/P (Price =$10)	Marginal Utility (Go Carts)	MU/P (Price =$5)
1st	30	3	10	2
2nd	20	2	5	1
3rd	10	1	2	.40
4th	5	.50	1	.20

1. How much is the total utility from 3 movies and 2 go carts?

2. Total utility from 2 movies and 4 go carts?

Utility Maximizing Rule

The consumer's money should be spent so that the marginal utility per dollar of each goods equal each other.

$$\frac{MUx}{P_x} = \frac{MUy}{P_y}$$

You use this rule subconsciously every day!

5. To maximize utility, a consumer with a fixed budget will purchase quantities of goods so that the ratios of the marginal utility of each good to its

(A) total utility are the greatest
(B) total utility are the same
(C) price are the greatest
(D) price are equal to one
(E) price are equal

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The table below shows total utility in utils that a utility-maximizing consumer receives from consuming two goods: apples and oranges.

Apples		Oranges	
Quantity	Total utility	Quantity	Total utility
0	0	0	0
1	20	1	30
2	35	2	50
3	45	3	65
4	50	4	75
5	52	5	80

Assume that apples cost $1 each, oranges cost $2 each, and the consumer spends the entire income of $7 on apples and oranges.

(a) Using the concept of marginal utility per dollar spent, identify the combination of apples and oranges the consumer will purchase. Explain your reasoning.

(b) With the prices of apples and oranges remaining constant, assume that the consumer's income increases to $12. Identify each of the following.

(i) The combination of apples and oranges the consumer will now purchase

(ii) The total utility the consumer will receive from consuming the combination in (i)

(c) With income remaining at $12, assume the price of oranges increases to $4 each. Identify each of the following.

(i) The combination of apples and oranges the consumer will now purchase

(ii) The total utility the consumer will receive from consuming the combination in (i)

Question 3

Correct Answer:

Part a: The utility-maximizing consumer will exhaust her income, purchasing quantities of each good such that for each commodity the marginal utility of the last unit purchased divided by the price of the commodity is equal. This consumer will purchase 3 apples and 2 oranges. The marginal utility per dollar of each commodity is equal: 10/$1 for apples and 20/$2 for oranges.

Part b: With the increase in income, the consumer will now purchase 4 apples and 4 oranges and have 125 utils (50 from apples and 75 from oranges).

Part c: With the increase in the price of oranges, the consumer will now purchase 4 apples and 2 oranges and have 100 utils (50 from apples and 50 from oranges).

Grading Rubric:

Part a, b, and c each worth 2 points for 6 points in total

(a) 3 apples and 2 oranges **(1 point)**
Marginal analysis: equalization of MU/$ or 10/1 (apples) = 20/2 (oranges) **(1 point)**
Note: The student may not simply use the maximizing of total utility for the explanation.

(b) 4 apples and 4 oranges **(1 point)**
50+75 = 125 utils **(1point)**

(c) 4 apples and 2 oranges **(1 point)**
50+50 = 100 utils **(1 point)**

Utility Maximizing Rule

The utility maximizing rule assumes that you always consume where MU/P for each product is equal

Sasha is a utility-maximizing consumer who spends all of her income on peanuts and bananas, both of which are normal goods.

(a) Assume that the last unit of peanuts consumed increased Sasha's total utility from 40 utils to 48 utils and that the last unit of bananas consumed increased her total utility from 52 utils to 56 utils.

(i) If the price of a unit of peanuts is \$1 and Sasha is maximizing utility, calculate the price of a unit of bananas.

(ii) If the price of a unit of peanuts increases and the price of a unit of bananas remains unchanged from the price you determined in part (a)(i), how will Sasha's purchase of peanuts change?

- One point is earned for calculating the price of a unit of bananas, \$4/8 = \$0.50.
- One point is earned for stating that Sasha will purchase fewer peanuts.