University of Oum El-Bouaghi

Faculty of Economics Commercial and Management Sciences

First Year

Microeconomics 1

First series of exercises

First Exercise:

We have the total utility (TU) schedule from consuming various quantities of commodity X per unit of time:

Qx	1	2	3	4	5	6	7	8	9
TUx	40	80	110	130	145	155	160	160	158

1-Find the marginal utility, 2- plot the total and marginal utility curves.3- find the saturation point

Second Exercise:

The table below illustrates the marginal utility data for an individual for two goods, assuming their prices are both 1 and his income is 11:

Q	1	2	3	4	5	6	7	8
TUx	11	10	9	8	7	6	5	4
TUy	19	17	15	13	12	10	8	6

1-State the consumer's equilibrium condition mathematically.

2-Determine how the individual should allocate his income between the two goods to maximize his utility.

3-What is the level of satisfaction the individual obtains at the equilibrium point?

Third Exercise:

A consumer with individual preferences consumes two goods, X and Y, and you have the total utility (TU) schedule from consuming various quantities of commodity X and Y per unit of time:

Q	1	2	3	4	5	6	7	8
TUx	180	310	400	460	505	535	555	570
TUy	80	142	190	226	252	270	282	292

1. Complete the table if the price of X is Px=5 and the price of Y is Py=2, and the income is M=37.

2. Determine the consumption bundle that maximizes the consumer's utility.

3. Calculate the total utility the consumer receives at equilibrium."

Fourth Exercise:

Let the consumer's utility function be represented as **TU = XY.**

1-What do X and Y represent?

2-Calculate the marginal utilities. Are they increasing, decreasing, or constant?

3-Calculate the level of satisfaction for the consumer at the combination $(X = 2, Y = 3)$.

Fifth Exercise:

Consider the consumer utility function can be written as **TU = $X^{1/2}$ $Y^{1/2}$.**

Assume Px=3, Py=1, M=120

find the equilibrium quantities that maximize his satisfaction.

What represents the Lagrange multiplier?

Sixth Exercise:

Suppose the consumer's utility function can be represented by **TU=$X^{3/4}$ $Y^{1/4}$**

Determine the demand functions that maximize the utility function.

Assume Px=2, Py=2, M=20 Find the equilibrium point.

Seventh Exercise:

If the consumer's utility function is **TU=$X^{1/2}$ Y**

and the quantities that achieve maximum satisfaction are $X = Y = 4$, calculate the prices of the goods when $(M = 24)$.

Eighth Exercise:

If the utility function is **TU = 1/2 XY**

and the price of good X is 1 and the price of good Y is 2,

1-Determine the demand functions that lead to a reduced expenditure at a utility level of 25.5.
2-Calculate the required income for that.