Name:	Number:

Remarks

- You have two hours and thirty minutes to complete this exam (2h 30m).
- The exam contains two parts: Part A composed of **4** problems and Part B with 12 multiple-choice questions.
- The multiple-choice questions in **Part B** should be answered using the **table on page 5**.

Part A (14 points)

1. Janice and Joplin are two producers of fish and fruit. They use a single input – labour – and dedicate 50 hours of labor per week to the production of both goods. The following table contains the number of hours needed to produce one unit of each good, given the available technology:

	Fish	Fruit
Janice	2	2
Joplin	4	5

a) Assuming that the production possibility frontiers (PPF's) are linear, represent the PPF's of both agents on a single diagram (use the horizontal axis for fish). [0,75 p]

b) On which production(s) do Janice and Joplin have absolute advantage? Justify your answer [0,75 p]

c) On which production does each producer have comparative advantage? Justify your answer. [1 p]

d) Now suppose that the time that Joplin has available for production increased to 70 hours per week. What are the consequences for the pattern of comparative advantage? [1 p]

2. The following questions relate to the concept of elasticity:

a) At the price of 500 € per plane ticket, 400 tickets are demanded. Knowing that the absolute value of the price-elasticity of demand (computed using the midpoint method) is 2, if the price increases to 700 €, how many tickets will be demanded? [1,5 p]

b) For an income of 30 000 €, the quantity demanded of good W is 50 000 units; for an income of 40 000 €, the quantity demanded of good W is 45 000 units.

   a. Which elasticity can you compute ith these numbers? Compute it. [1,5 p]

   b. What kind of good is good W? [0,5 p]

3. Consider the following bundles of consumption of goods X and Y (labeled A - F), which exhaust Marc's income, and the corresponding total utility levels (U) measured in *utis*:

Bundle	Good X		Good Y	
	Qx	Ux	Qy	Uy
A	0	---	10	56,7
B	1	15	8	53,2
C	2	25	6	47,0
D	3	31	4	36,8
E	4	34	2	21,4
F	5	36	0	---

a) Represent graphically the budget line that corresponds to the consumption bundles above (use the horizontal axis for good X). Which events lead to:

    i) a parallel shift of the budget line?

    ii) a rotation of the budget line?   [1,5 p]

b) If prices are Px = 6 and Py = 3, compute the amount of income that Marc needs to buy any of the above bundles. [1 p]

c) Identify Marc's optimal consumption bundle when holding the income level computed in b). Justify your answer. [1 p]

4. Mrs. Dalloway produces lamps. Fixed costs of production amount to 200 € per month. Variable costs are presented in the following table:

Number of lamps produced (per month)	Variable costs (€ per month)
0	0
10	100
20	230
30	370
40	520
50	730
60	946
70	1179

a) Compute, for each level of output, the average total cost (ATC). Indicate the level of production that minimizes ATC. For which levels of production does the spreading effect dominate? Justify your answer. [1,5 p]

b) Define the concept of marginal cost (MC) and compute it for each level of output. Identify and explain the principle that justifies increasing marginal costs as quantity produced increases. [1 p]

c) Explain the relationship between MC and ATC. [1 p]

Part B (6 points)

Mark with an **X** the correct answer using the table below. Each correct answer is worth 0,5 points and we discount 0,166 points for each wrong answer.

|	1	2	3	4	5	6	7	8	9	10	11	12
a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)
b)	b)	b)	b)	b)	b)	b)	b)	b)	b)	b)	b)	b)
c)	c)	c)	c)	c)	c)	c)	c)	c)	c)	c)	c)	c)
d)	d)	d)	d)	d)	d)	d)	d)	d)	d)	d)	d)	d)

1. A technological improvement in the production of goods:

a) Leave the production possibility frontier (PPF) unchanged.
b) Shift the PPF downwards and to the left.
c) Shift the PPF upwards and to the right.
d) Shift the PPF upwards and to the right whenever there is an increase in the amount of resources.

2. Assume that, in a market initially in equilibrium, consumers' preferences change so that, for each price, quantity demanded is now higher. Which of the following sentences is TRUE, if nothing else changes?

a) Equilibrium price increases, but equilibrium quantity decreases.
b) Both equilibrium price and quantity increase.
c) Equilibrium price decreases, but equilibrium quantity increases.
d) We do not have enough information to tell how equilibrium price and quantity change.

3. The following graph shows supply and demand of good X. If the government imposes an excise tax of 7 € on the consumption of the good, which of the following sentences is FALSE?
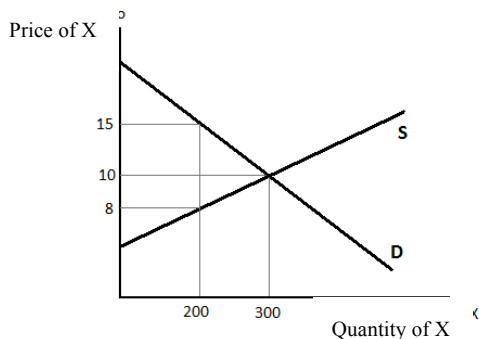
a) The price paid by consumers increases 5 € and total surplus decreases 350 €.
b) The price received by producers increases 2 € and deadweight loss is 350 €.
c) The price paid by consumers increases 5 € and deadweight loss is 350 €.
d) The price received by producers decreases 2 € and tax revenue is 1400 €.

4. Addiction of tobacco smokers allows us to predict that an excise tax on cigarettes:

a) Is essentially paid by smokers and leads to a deadweight loss that is smaller than the deadweight loss in case smokers could easily quit smoking.
b) Is essentially paid by smokers and leads to a deadweight loss that is bigger than the deadweight loss in case smokers could easily quit smoking.
c) There is no relationship between how easy it is to quit smoking and the tax' impact.
d) Is essentially supported by cigarette producers, independently of how easy it is to quit smoking.

5. If the price of a good increases, the corresponding substitution effect tells us:

a) How the consumption of the good changes.
b) How the consumption of the good changes when the consumer's income is kept constant.
c) How the consumption of the good changes when the consumer's income is increased so as to keep utility constant.
d) How the consumption of a substitute good increases.

6. If the price of a good decreases 2% and revenue increases 0.5%,

   a) At the current price level, demand is unit-elastic.
   b) Quantity demanded increases 5%.
   c) At the current price level, demand is inelastic.
   d) At the current price level, demand is elastic.

7. Consider the following diagram (where CMg represents marginal cost, MC; CTM represents average total cost, ATC; and RMg represents marginal revenue, MR):
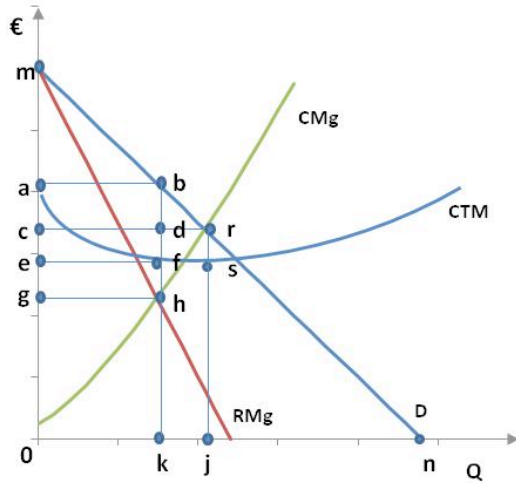
The monopolist's total revenue and profit are, respectively, represented by:

   a) "0abk" and "eabf".
   b) "0abk" and "gabh".
   c) "0crj" and "ecrs".
   d) "0abk" and "cabd".

8. Frank spends all his income in food (F) and housing (H). His budget line is given by 5F + 20H = 100. Which of the following consumption bundle(s) belong(s) to Frank's consumption possibilities?

   a) 8 units of F and 3 units of H.
   b) 12 units of F and 2 units of H.
   c) 0 units of F and 5 units of H.
   d) All the bundles described above.

9. An indifference curve is a line that contains all the consumption bundles that:

   a) An individual can afford with a given income.
   b) Give the same level of total utility.
   c) Give the same marginal utility.
   d) Have the same marginal rate of substitution (MRS).

10. The fact that marginal productivity of labor is decreasing means that:

   a) There are diseconomies of scale (decreasing returns to scale).
   b) There are diminishing returns to labor.
   c) There are diminishing returns to labor and, as a consequence, diseconomies of scale.
   d) The average productivity of labor is increasing.

11. The long run average total cost curve (ATClr) is obtained by:

   a) Selecting, for each level of production, the lowest short run average total cost (ATCsr).
   b) Selecting the minimum point of the several short run average total cost (ATCsr) curves.
   c) Summing up the short run average total costs (ATCsr).
   d) Summing up the minimum points of the short run average total cost (ATCsr) curves.

12. Consider the game between players 1 and 2 represented in the following matrix, where each player has strategies X and Y available. Which of the following sentences is TRUE?

		Player 2	
		X	Y
Player 1	X	2,3	6,1
	Y	1,1	7,2

Remark: In each cell, the first number corresponds to player 1's payoff and the second number corresponds to player 2's payoff.

   a) The strategy profile (X,X) is the unique non-cooperative solution (Nash equilibrium) of the game.
   b) The strategy profile (X,X) is the dominant strategy equilibrium of the game.
   c) The strategy profile (Y,Y) is one of the non-cooperative solutions (Nash equilibria) of the game.
   d) The strategy profile (Y,Y) is one equilibrium in dominant strategies of the game.