

Name:	Number:
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Remark:

You have two hours and thirty minutes to complete this exam (2h 30m).

Group A (13 points)

1. Good X is produced by 1000 identical firms that form a perfectly competitive industry. The total cost of producing X by an individual firm is given in the following table:

Quantity Produced	Total Cost (TC)	Average Total Cost (ATC)	Average Variable Cost (AVC)	Marginal Cost (MC)
0	40			
1	120			
2	180			
3	260			
4	370			
5	520			

- a) Compute the marginal costs (*MC*), the average total costs (*ATC*), and the average variable costs (*AVC*) for the different levels of production. Represent graphically. **(2 points)**
- b) Using the values computed above, draw a firm’s supply curve. Justify. **(1 point)**
- c) Now assume that demand is as given in the following table:

Quantity Demanded	Price
6000	30
5000	70
4000	110
3000	150
2000	190
1000	230

Represent market demand graphically. **(1 point)**

- d) Using the diagram drawn in c), represent the market supply and compute market equilibrium. **(1.5 points)**
- e) Explain why the equilibrium computed in d) is not a long-run equilibrium in this perfectly competitive market. **(1 point)**

2. The Simpsons, who moved to Jokkmokk in Canada, have 120 Euros to spend in wool caps and in pairs of gloves. In Jokkmokk, pairs of gloves and wool caps cost 20 Euros each.

- a) Draw the Simpsons' budget restriction placing wool caps in the horizontal axis. **(1 point)**
- b) Knowing that the two goods are perfect complements so that, for each pair of gloves, the Simpsons like to buy exactly one wool cap, answer the following questions:
 - (i) Draw in the same diagram, one indifference curve of the Simpsons. **(0.5 points)**
 - (ii) Determine the number of pairs of gloves and the number of wool caps that the Simpsons will buy in order to maximize their utility. Justify your answer. **(1 point)**

The following table contains data on the demand of wool caps in Jokkmokk:

Price (in Euros)	Quantity Demanded
30	0
28	10
26	20
24	30
22	40
20	50
18	60
16	70
14	80

- c) Assume that the market for scarfs in Jokkmokk is perfectly competitive. Recently, the Canadian government imposed an excise tax to be paid by the producers of wool caps that lead to an increase in the price of wool caps from 20 to 22 Euros. Determine tax incidence on consumers and compute the reduction in consumers' surplus. **(1.5 points)**
- d) If the production of wool caps was made by a single firm with constant marginal costs equal to 20 Euros, what would the price charged by this firm be? Justify your answer. **(1.5 points)**
- e) Consider the table above containing data on the demand of wool caps. Knowing that wool caps and hats are perfect substitutes and that their cross-price elasticity of demand is equal to 1, compute, using the mid-point method, the number of wool caps that would be demanded at the price of 20 Euros if the price of hats doubled. **(1 point)**

Group B (7 points)

Signal your answers with an **X** in the following table. Each correct answer is worth 0,5 points and 0,125 will be discounted for each wrong answer.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
a)	a)	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)	b)	b)
c)	c)	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)	d)	d)

1. In economics, equilibrium is a situation in which:

- a) every agent has the same utility level.
- b) no agent can get better off by making a different decision.
- c) no agent has incentives to change his/her behavior.
- d) both b) and c) are correct.

2. Maria's monthly income has doubled, allowing her to change her consumption decisions. As such, the marginal utility per Euro spent by Maria on a normal good has:

- a) increased.
- b) decreased.
- c) not changed.
- d) the information provided is not enough to answer this question.

3. If the demand curve of a good is linear:

- a) the demand is elastic when the price of the good is low.
- b) the demand is inelastic when the price of the good is high.
- c) the price-elasticity of demand is constant along the demand curve.
- d) none of the remaining alternatives is correct.

4. Bread and butter are complements. If the price of bread decreases, the surplus of the butter producer:

- a) increases.
- b) decreases.
- c) does not change.
- d) changes, but we cannot tell whether it increases or decreases.

5. John spends all His income in books and CD's. The marginal utility of the last CD he bought is 12 and the marginal utility of the last book is 6. Knowing that each CD costs 12 and each book costs 8, John:

- a) chose the optimal consumption bundle.
- b) should buy more books and less CD's.
- c) should buy less books and more CD's.
- d) is spending too much money.

6. To set a price floor above the equilibrium price leads to a surplus that is bigger, the _____ the price-elasticity of demand and the _____ the price-elasticity of supply.

- a) bigger; bigger
- b) smaller; bigger
- c) bigger; smaller
- d) smaller; smaller

7. In a perfectly competitive market, a firm produces 100 units of output, has an average total cost of 6 Euros and an average fixed cost of 2 Euros. The price of the good is 3 euros, the same as the marginal cost of production. If the goal of this

firm is to maximize profits, in the short run, the firm should:

- a) increase production.
- b) maintain production.
- c) decrease production, keeping a positive production level.
- d) stop producing.

8. Each day, in the US, 5 planes or 250 cars are produced, whereas in France 4 planes or 180 cars are produced. We can say that:

- a) France has absolute advantage in the production of cars.
- b) France has comparative advantage in the production of cars.
- c) France has comparative advantage in the production of planes.
- d) France does not have absolute nor comparative advantage in the production of cars nor planes.

9. Consider the following game, where the payoff of player 1 is the first number in each cell and the payoff of player 2 is the second number and where the goal of each player is to maximize payoffs.

		Player 2	
		Strategy E	Strategy D
Player 1	Strategy A	16,9	5,8
	Strategy B	5,4	1,3

The pair of strategies (A,E):

- a) is an equilibrium in dominant strategies of this game.
- b) is an equilibrium of the game, but E is not dominant.
- c) is not an equilibrium of this game.
- d) and the pair of strategies (B,D) are two equilibria of the game.

10. A monopolist can distinguish between two groups of consumers: those with an elastic demand and those with an inelastic demand. If the monopolist discriminates prices, he will charge a lower price to the consumers:

- a) with elastic demand.
- b) with inelastic demand.
- c) for whom it is harder to replace the good in question.

d) the information given is not enough to answer to this question.

11. Following an increase in income, the demand curve of a normal good:

- a) shifts to the right.
- b) does not shift.
- c) shifts to the left.
- d) shifts only if the income-elasticity of demand is negative.

12. An increase in the price of an input may lead to the following changes in the market of the final good:

- a) shift to the left of the demand curve.
- b) shift to the right of the supply curve.
- c) increase in the equilibrium price.
- d) increase in the quantity traded in equilibrium.

13. An oligopoly is characterized by:

- a) the existence of firms that are price-takers.
- b) the existence of a relatively small number of firms.
- c) the inexistence of strategic interdependence.
- d) the existence of a single firm.

14. An economy's production possibility frontier (PPF) is linear if:

- a) there are economies of scale.
- b) there are increasing returns to scale.
- c) opportunity costs are constant.
- d) opportunity costs are positive.

