

QUESTION 1 - MULTIPLE CHOICE (15 POINTS)

The demand curve for a good in a given market is given by $Q = 10 - 2P$ where Q = quantity bought and P is the price. The equilibrium price is $P = 3,5$ with a constant marginal cost of production of $C = 2$. Calculate the consumer surplus (CS) (=buyer surplus)

- a) CS = 2,25
- b) CS = 4,5
- c) CS = 10,75
- d) CS = 12,75

The accessories to Apple computers are clearly more expensive than similar accessories to Windows-based computers. This is an example of ...

- a) moral hazard
- b) adverse selection
- c) hold-up
- d) none of the answers mentioned under a, b and c is correct

Which of the following statements is correct?

- I. a monopolist facing a market where customers have different willingness's to pay would rather implement indirect segment discrimination than complete price discrimination
 - II. when the marginal cost of a monopolist decreases with a constant amount (e.g. €10) at all scales of production, the monopolist should decrease price with the same amount
- a) I and II are both correct
 - b) I is correct and II is false
 - c) I is false and II is correct
 - d) I and II are both false

Which of the following statements is correct?

- I. consider a monopolist selling a normal good and facing less than infinitely elastic demand that maximizes profit. Then it is true that the optimal price is higher than marginal revenue
 - II. a standard ratio followed e.g. by stock market analysts is the advertising-to-sales ratio which measures advertising expenditure as a percentage of sales. The economic rationale for following this ratio is that firms in more advertising-intensive industries make higher profits
- a) I and II are both correct
 - b) I is correct and II is false
 - c) I is false and II is correct
 - d) I and II are both false

Indicate the correct answer.

A best response function (or reaction function) ...

- a) characterizes all Nash equilibria of a game
 - b) is based on the first order condition
 - c) is always upward sloping
 - d) characterizes the equilibrium decision of a firm
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Consider a risk (more specific: a given disease) that does not depend on an individual's actions, but only on her type (e.g. "high" risk or "low" risk). In insuring such a risk an insurance company offers policies giving full and partial coverage (ie, with and without a deductible) in order to...

- a) solve an adverse selection problem
 - b) offer customers with different degrees of risk aversion a different choice
 - c) incentivate high risk customers
 - d) none of the answers mentioned under a, b and c is correct
-

consider a perfectly competitive market. Demand is given by $Q(P) = 135 - 4,5P$; and the supply curve is as follows: $Q(P) = 1,5P$ where $Q(P)$ is the quantity demanded / supplied at a given price P . calculate the price elasticity of demand in the market equilibrium

- a) -3
 - b) -4,5
 - c) -6,75
 - d) none of the answers mentioned under a, b and c is correct
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a monopolist faces two markets with the following demand curves:
market A: $Q_A = 30 - 2P_A$ and market B: $Q_B = 45 - 3P_B$ where Q is the quantity demanded at price P . the marginal cost of production is constant and equal to one. The optimal price(s) is/are:

- a) $P_A = 14,5$ and $P_B = 22$
 - b) $P_A = P_B = 8$
 - c) $P_A = P_B = 19,25$
 - d) None of the answers mentioned under a, b and c is correct
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If there are fixed costs in the production of a given good, then we know for sure that ...

- a) there are decreasing returns to scale for at least some level of production
 - b) there are economies of scope
 - c) there are increasing marginal costs (excluding the first unit of production)
 - d) none of the answers mentioned under a, b and c is correct
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The reason for the fact that many employees are not on piece-rate or similar incentive schemes providing strong incentives is:

- a) risk aversion on the side of the employer
- b) many jobs have multiple responsibilities
- c) due to hold-up problems
- d) none of the answers mentioned under a, b and c is correct

indicate the correct answer.

in indirect segment discrimination, the selling firm ...

- a) utilizes the incentive compatibility constraint
- b) does not need to be able to prevent sale
- c) induces low valuation consumers to buy a low-quality good
- d) all of the answers mentioned under a, b and c are correct

consider the regulation of a natural monopoly. Average cost (AC) regulation differs from marginal cost (MC) regulation in the following way(s):

- a) AC leads to the monopolist making a profit
- b) AC is economically efficient
- c) With AC the government does not have to subsidize the monopolist
- d) With AC the monopolist has an incentive to exaggerate its costs

Consider an industry with two firms that produce a homogenous good with downward sloping demand $Q(P)$ and competing in prices where $Q(P)$ is the quantity demanded at price P . neither firm has a capacity constraint. The marginal cost (MC) of firm 1 is 2 and the MC of firm 2 is 1,5. Imagine that these firms choose prices sequentially with firm 1 moving first. In equilibrium it is true that ...

- a) firm 1 has zero sales
- b) firm 2 has a positive price-cost margin
- c) firm 1 does no better because it is a first-mover, compared to the firms choosing prices simultaneously
- d) all of the answers mentioned under a, b and c are correct

indicate the correct answer.

The economic rationale for patents is based on...

- a) regulation
- b) moral hazard in invention
- c) monopoly theory of pricing
- d) externalities linked to knowledge

Players A and B play a simultaneous move game where both of them have three choices. In a given cell, the first number is player A's payoff, the second player B's. for example, if player A plays UP and player B plays LEFT, A gets 2 and B gets 4. The game has the following number of pure strategy Nash equilibria:

- a) none
- b) 1 Nash equilibrium
- c) 2 Nash equilibria
- d) 3 Nash equilibria

		PLAYER B		
		LEFT	CENTER	RIGHT
PLAYER A	UP	2, 4	2, 2	1, 4
	MIDDLE	1, 3	3, 1	3, 2
	DOWN	5, 3	4, 2	4, 4

QUESTION 2 – ASYMMETRIC INFORMATION (5 POINTS)

Insurance companies do not always provide everybody full insurance. In other words, they offer (at least some customers) a contract with a deductible where the customer pays first X euros of any damage, and the insurance company the rest

- 2.1 give two reasons, related to asymmetric information, why insurance companies do this, and explain the underlying logic (3 points)
- 2.2 also explain why it may be in the interest of both customers and the insurers that insurers offer a menu of contracts which also includes the possibility to buy full insurance

QUESTION 3 – MONOPOLY (6 POINTS)

A monopolist faces two markets with the following demand curves:

$$\text{Market A: } Q_A = 10 - 3P_A$$

$$\text{Market B: } Q_B = 6 - 2P_B$$

Where Q is the quantity demanded at price P. the marginal cost of production is constant and equal to one for both markets. It is easiest to think of the monopolist having one factory from which it serves both markets.

- 3.1 calculate the optimal prices and the profits from each market and show the intermediate steps (2 points)
- 3.2 imagine that there is a fixed cost that needs to be paid in order to operate the factory. How high can that fixed cost be at most for the firm to be active? (2 points)
- 3.3 imagine that the fixed cost is at the highest level for which the firm would still be active *minus one*. (in other words, let's imagine that you calculated in 3.2 that the highest (X° is 20,5. Then the fixed cost you are supposed to analyze here is ($W-1$ or 19,5). Would it make sense to divide that fixed cost 50/50 to each market? Why or why not? (2 points)