Instructions and definitions

Welcome to the Economics round of the IEOx WinterChallenge!

You have to answer 20 multiple choice questions in 80 minutes.

By clicking on the button in the top right corner of your screen, you can open a timer to see how much time you have left.

Keep in mind that you will get negative points for wrong answers, so if you are not sure you know the right answer, choose:
"I will not answer this question".

Suppose that comma (",") indicates a decimal point.

Click on images and zoom in, using "+" where needed.

Do not forget to submit your answers and fill in your full name and the PERSONAL code we sent you in the last e-mail (as "student's ID"), properly. It is crucial to identify your results!

Wishing you success! We hope you enjoy the experience! :)

QUESTION 1 ☆

Three friends (Donald, Bob and Catherine) want to dine out. They may choose among an Italian, a Mexican and a Vietnamese restaurant. Their ordinal preferences are as follows:

i) Donald: Italian < Mexican < Vietnamese
ii) Bob: Vietnamese < Italian < Mexican
iii) Catherine: Mexican < Vietnamese < Italian

You are advising Catherine and want to guide her set up a voting system to make the group of friends pick the Italian restaurant. Which of the following would you suggest:

- (●) They first vote between Vietnamese and Mexican and afterwards between the outcome of the first vote and Italian.
- ( ) They first vote between Italian and Vietnamese and afterwards between the outcome of the first vote and Mexican.
- ( ) They first vote between Mexican and Italian and afterwards between the outcome of the first vote and Vietnamese.
- ( ) They vote among all three options simultaneously and go to the one with the most votes.

QUESTION 2 ☆

An airline company wants to maximize profits by applying price discrimination. Choose the correct pricing policy:

- ( ) Charge customers booking early higher than the last minute customers, because the former are less price sensitive.
- ( ) Directly ask consumers to reveal their willingness to pay and charge them based on that.
- (●) Provide discounts to different groups of customers, like university students or married couples.
- ( ) All of the above.

QUESTION 3 ☆

The best pizzeria in town charges $15 per pizza for the first two pizzas and $10 per pizza for any additional pizzas ordered. This is an example of:

- ( ) Monopoly using tiered pricing.
- ( ) Monopoly using block pricing.
- ( ) Monopolistic competition using tiered pricing.
- (●) Monopolistic competition using block pricing.

QUESTION 4 ☆

In the Lego movie (2014) the hero (Emmet) is happy and we hear: "Drink overpriced coffee!".

Emmet gets his coffee and Barista says: "Here you go, that's $37"

Emmet responses: "Handsome!" and picks the coffee.

This means that his price elasticity of demand might be around:

- (●) 0
- ( ) 0,5
- ( ) -1
- ( ) $-\infty$

QUESTION 5 ☆

In a picturesque village, two restaurants share the market. At the moment, they get quite the same profit, $15.000 each.

They have to consider spending $20.000 on renovating the road to ease access.

If the road is renovated, their profit will increase to $50.000 each (without taking into account any renovation cost).

- ( ) The Nash equilibrium is for both firms to not invest leading to a situation that is not Pareto efficient.
- ( ) The Nash equilibrium is for both firms to invest whereby they achieve the highest profit.
- (●) There are two Nash equilibria. Only one firm to invest.
- ( ) There are no Nash equilibria in this game.

QUESTION 6 ☆

At the equilibrium point for good Z, the elasticity of demand is -0,5 and the elasticity of supply is 1,69.

If a per unit tax of 5€ is introduced, which group – consumers or producers – would bare most of the tax burden?

- (●) Consumers.
- ( ) Producers.
- ( ) They will share the burden equally.
- ( ) The given information is insufficient to answer.

QUESTION 7 ☆

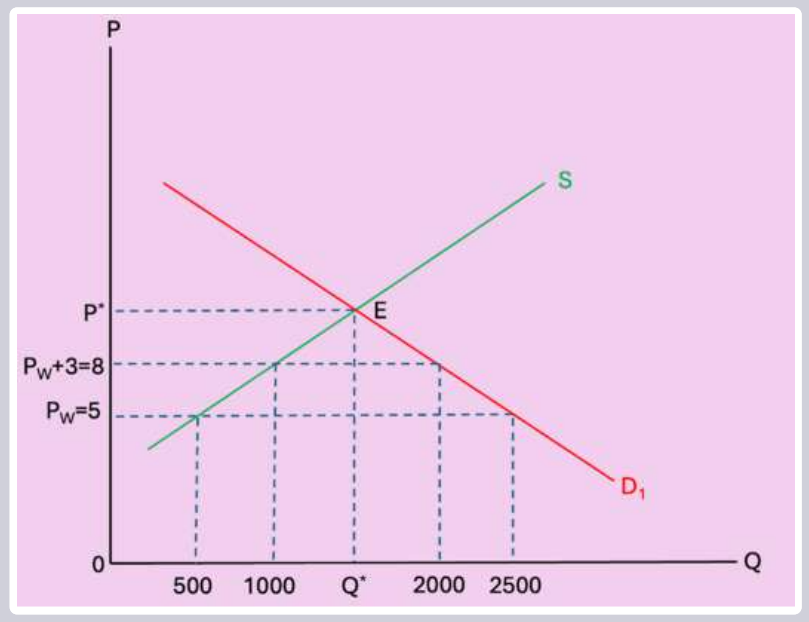
Which of the following changes will most likely result in a fall in the spending multiplier?

- ( ) A decrease in the marginal propensity to save.
- (●) An opening up to international trade and allowing for imports.
- ( ) Lowering the tax rate.
- ( ) All of the above.

QUESTION 8 ☆

According to the IMF, the global price of orange in December 2024 was about $5 per pound. A country set a tarrif of $3 on the product. According to the diagram, the deadweight loss is:

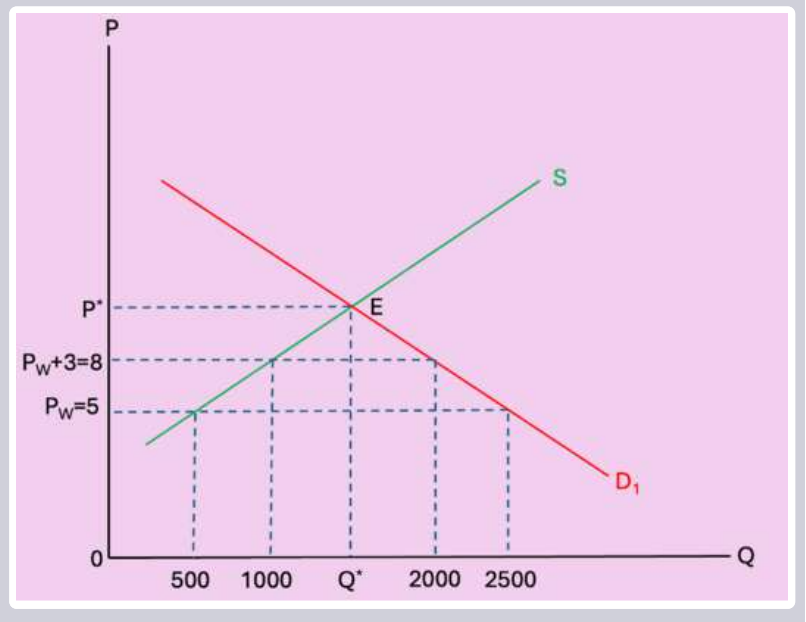
Source: https://fred.stlouisfed.org/series/PORANGUSDM



- (●) $1500
- ( ) $3000
- ( ) $4000
- ( ) $4500

QUESTION 9 ☆

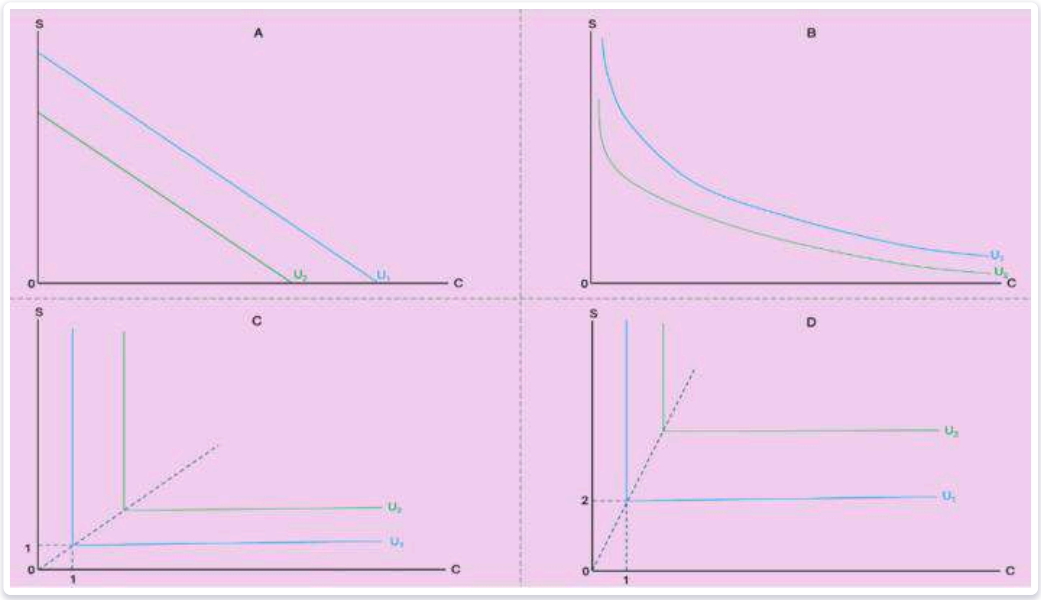
A principal-agent problem is a conflict of interest between a person or entity (principal) and another person or entity (agent) authorized to act on their behalf. The problem is especially serious when each party possesses a different information set. Among the following examples, pick the one that better describes the aforementioned problem.



- ○ An economics professor (agent) works overtime to finish a presentation for his university's research seminar (principal).
- ○ A factory worker (agent) takes extra breaks, although their employer (principal) tracks all working hours and adjusts wages accordingly.
- ◉ A salesman (agent) - working for a firm that wants to limit costs (principal) - rents an expensive hotel and airline for his business trip.
- ○ A diplomat (agent) delivers his president's (principal) declaration to the leader of a foreign country.

QUESTION 10 ☆

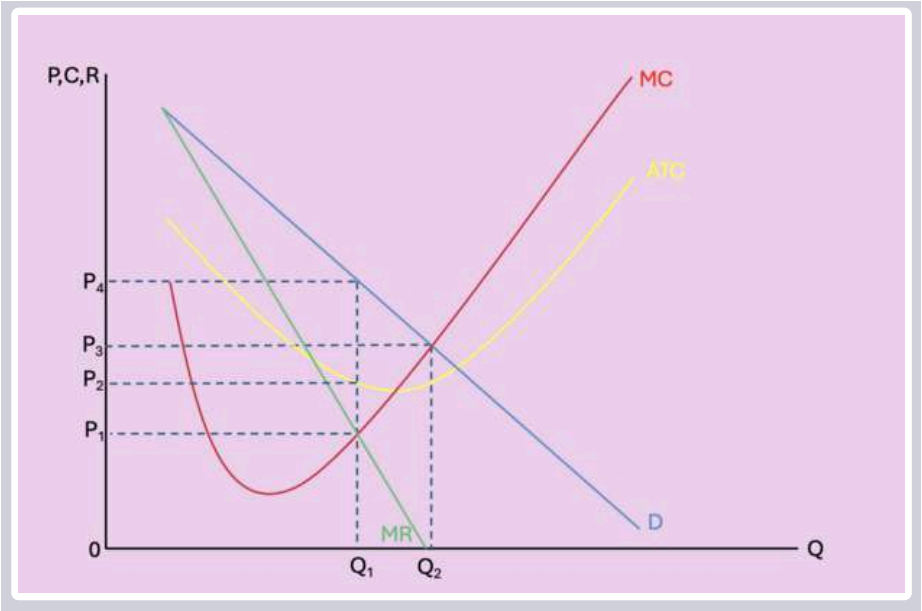
Which of the following Indifference Curves better represent the consumption of smartphones (S) and charging cables (C)?



- A
- B
- C
- D

QUESTION 11 ☆

The following diagram, represents a monopoly. Which of the following statements is correct?



- Profit per unit is $P_4 - P_3$
- Profit per unit is $P_4 - P_2$
- Profit per unit is $P_4 - P_1$
- Profit per unit is $P_3 - P_2$

QUESTION 12

You own a house that has a market value of $625,000 and are considering insuring it against natural disasters (fires, tornados, floods etc.).

The insurance would cost $20,000 and there is a 3% chance that your house will be struck by a natural disaster.

Given that you accepted the offer, which statement best describes your risk preference:

- (●) You are a risk-averse individual.
- ( ) You are risk-neutral.
- ( ) You are a risk-loving individual.
- ( ) You didn't have enough information to make a rational decision because the future is uncertain.

L	0	1	2	3	4	5	6
X	0	100	240	420	640	800	840

QUESTION 13

A factory employs 6 workers and is required by law to maintain this workforce. It may produce good A or good B. Currently, it produces and sells 800 units of good A.
Given that the opportunity cost of producing A is 5 units of B per unit of A, how many units of product B could be produced along with the 800 units of product A?

- ( ) 8
- ( ) 40
- ( ) 160
- (●) 200

QUESTION 14 ☆

As part of a national highway renovation, the government rerouted traffic to bypass all villages.

Bulrush, a small village that relied economically on passing travelers stopping for food and fuel, now sees only 30% of its original visitors.

This has led to a decline in business services and amenities, further reducing the appeal for travelers to stop.

How is this related to network externalities?

- (●) Decreased traffic reduces motivation for business to offer options and services.
- ( ) Network externalities are irrelevant in this context since the new highway does not affect technological adoption rates.
- ( ) The concept of network externalities does not apply to highways or infrastructure but only to technological products like software or telecommunication networks.
- ( ) A renovated highway network creates network externalities for its users.

QUESTION 15 ☆

Mr. Krab, the Krusty Krab owner had an amazing idea to increase his profits: he convinced employees of his company to work for half the money they used to get paid without reducing their productivity and, of course, increased profits.

He shares this story publicly with an influencer and now all company owners want to follow his steps. This general decrease in all salaries seems to be:

- ( ) a good idea, as all companies' profits will increase.
- ( ) a good idea, as it may increase competition.
- ( ) a bad idea, as it is Pareto inefficient.
- (●) a bad idea, as it would decrease aggregate demand.

QUESTION 16 ☆

A government is concerned about the high price of a drug essential for a rare disease.

Which of the following measures would be most effective in reducing the drug's price while ensuring its availability to patients?

- ○ Imposing a price ceiling on the drug set by the government.
- ◉ Supporting research and development for the creation of generic versions of the drug.
- ○ Providing tax incentives to pharmaceutical companies to reduce production costs.
- ○ Eliminating tax burdens on all medications to lower retail prices.

QUESTION 17 ☆

During a period of economic recession, which of the following measures would be the most effective in boosting demand without causing long-term inefficiency, to stimulate economic recovery?

- ○ Expanding unemployment benefits to support consumer demand.
- ○ Temporarily reducing income taxes for middle-income earners.
- ◉ Providing tax incentives for investments in critical infrastructure and renewable energy.
- ○ Implementing strict cuts to public spending to reduce national debt.

QUESTION 18 ☆

An economy is experiencing stagflation, characterized by high inflation and high unemployment.

The government is considering various measures to address the situation.

Which of the following measures is most likely to reduce inflation without worsening unemployment?

- ○ Increasing the VAT rate.
- ○ Lowering the central bank's key interest rate by 0.5% to boost investment.
- ◉ Implementing labor market reforms, such as flexible contracts and improved vocational training, to increase productivity.
- ○ Reducing the fiscal deficit by cutting non-productive expenditures to lower interest rates in the long run.

QUESTION 19 ☆

Two firms, A and B, compete for the same market. Both firms have fixed costs of $100. However, their marginal costs differ:

Firm A: Marginal Cost = $5
Firm B: Marginal Cost = $8

The market demand is given by: $Q_D = 1.000 - 100 \bullet P$

Assuming firms compete by setting prices, determine the equilibrium sales of Firm A and Firm B.

- (●) $Q_A > 200, Q_B = 0$
- ( ) $Q_A = 100, Q_B = 100$
- ( ) $Q_A < 500, Q_B < 200$
- ( ) $Q_A = 0, Q_B = 0$

QUESTION 20 ☆

Which of the following statements about fiscal policy under recession is correct?

- ( ) Governments should choose balanced budgets to avoid long-term economic instability.
- (●) Automatic stabilizers, such as unemployment benefits and progressive taxation, help smooth economic fluctuations without requiring new government action.
- ( ) The fiscal multipliers do not apply, as the economy is not at full employment.
- ( ) Interest rates should be reduced, to maintain stable economic growth without increasing public debt.