ECON 101, Final
Monday, July 18, 2016
10am - 12pm in Ballroom, Block C-2, Nazarbayev University

DO NOT TURN FROM THIS PAGE UNTIL INSTRUCTED TO DO SO!

First name:

Last name:

Exam policies and details:

1. Do not remove staple or separate this booklet.

2. All answers must be written in this booklet. Make sure to mark your multiple choice answers clearly.

3. No calculators or communication devices permitted.

4. Cellphones should be switched off and all possessions other than pens must be in your bag during the exam.

5. All answers should be written in pen.

6. No speaking during the exam except to the lecturer and proctors.

7. There are a total of 18 questions, including **12 multiple choice** questions and **6 exercises**.

8. When asked to explain your answer, you must do so to get full credit. If you are not asked to explain, do not explain!

9. Raise your hand if you need to leave the room for any reason. You may not take the exam or any belongings out of the room.

10. Points will be deducted from students who continue work after time is called.

Honor pledge: I agree to neither give help to nor receive any help from others. I understand that the use of a calculator or communication device on this exam is academic misconduct. I also understand that providing any information about this exam to other students is academic misconduct, as is taking or receiving any information from other students. Thus, I will cover my answers and not expose my answers to other students. It is important to me to be a person of integrity and that means ALL ANSWERS on this exam are my answers. Any violation of these guidelines or the exam policies will result in a penalty of receiving a zero on this exam. You will additionally be reported. **By signing your name here, you agree to the honor pledge and affirm that you have read it and the exam policies above:**

_____

Score (*for instructor use only*):

Q	S	Q	S	Q	S
MC	/48	15	/8	18	/7
13	/9	16	/8		
14	/8	17	/12	**T**	/100

1. (MC, 4 pts) In the following figure of a Pigouvian subsidy, what is the role of the black filled triangle? Pick the best answer.
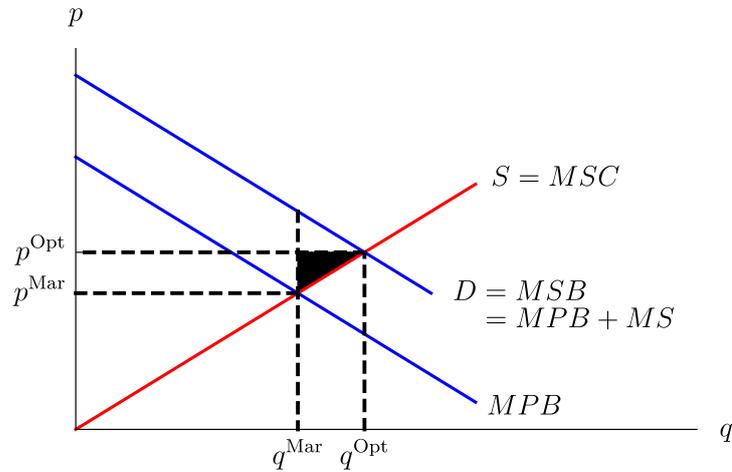
(a) It is a positive part of producer surplus.

(b) It is a negative part of the tax revenue.

(c) It is a positive part of external surplus.

(d) All of the above.

(e) None of the above.

2. (MC, 4 pts) Which of the following is true about a flat-rate sales tax on all purchases?

(a) It is regressive if low-income households consume a higher percentage of their income than high-income households.

(b) It is regressive if high-income households consume a higher percentage of their income than low-income households.

(c) It is proportional if low-income households consume a higher percentage of their income than high-income households.

(d) It is proportional if high-income households consume a higher percentage of their income than low-income households.

3. (MC, 4 pts) How do we create the hypothetical intermediate bundle to separately determine the income and substitution effects on x and y of a decrease in p_x?

(a) We find the bundle that the agent would select if she had her original wealth/income but with the new prices.

(b) We find the indifference curve passing through the optimal bundle with the original prices and the point on that indifference curve where the slope equals that of the new budget constraint.

(c) We find the indifference curve passing through the optimal bundle with the new prices and the point on that indifference curve where the slope equals that of the original budget constraint.

(d) We find the bundle that the agent would select if she had her new wealth/income but with the original prices.

4. (MC, 4 pts) What is the present value of a project that gives profits of $30 today and $30 one period from today, supposing the per-period interest rate is 50%.

   (a) $30

   (b) $33.$\dot{3}$

   (c) $35

   (d) $45

   (e) $50

5. (MC, 4 pts) What is the pure Nash equilibrium of the following game?

	W	X	Y	Z
U	3,6	4,10	5,0	0,8
M	2,6	3,3	4,10	1,1
D	1,5	2,9	3,0	4,6

   (a) (3,6)

   (b) (4,10)

   (c) (4,6)

   (d) (U,X)

   (e) (M,Y)

6. (MC, 4 pts) What does it mean when a firm issues a dividend?

   (a) It gives some of its profits to shareholders.

   (b) It sells shares on the public share market.

   (c) It pays interest on business loans to banks.

   (d) It projects future earnings for investors.

7. (MC, 4 pts) Conservative economic ideology, as expressed by Kevin Murphy (guy with the red cap) in the video we watched, suggests which of the following as a contributing cause of inequality?

   (a) Genetic reasons: intelligent parents tend to have intelligent children.

   (b) Demand for highly-skilled labor has increased faster than the supply.

   (c) Cheap imports from China have damaged American manufacturing.

   (d) America's system of taxation has become less progressive over the last thirty years.

   (e) Immigration of low-skilled migrants.

8. (MC, 4 pts) Income taxes are 10% for [0, $20000], 30% for ($20000, $40000]. A $1000 deduction may be claimed per alligator in the household. There is a sales tax of 50% on all purchases. Suppose Harry's pre-tax income is $35000 and he has five alligators. If he spends half of his after-tax income on consumption (including the sales tax he pays), what is the total amount he pays in sales taxes?

   (a) $4750

   (b) $5000

   (c) $6275

   (d) $7125

   (e) $7500

9. (MC, 4 pts) Which of the following statements best captures the results of the adverse selection, signaling, and screening models we studied?

   (a) In adverse selection, sellers of bad used cars would lie about the quality of the cars so buyers would end up overpaying. Screening and signaling were both ways the buyer could test the quality of the car to avoid overpaying.

   (b) In adverse selection, we found that Pareto efficient trades failed to take place due to asymmetric information – signaling and screening were solutions to the information asymmetry, but resulted in their own inefficiencies.

   (c) In adverse selection, we found that employers may select low-productivity workers for a high-wage because they could not observe workers' productivity. Screening and signaling were two ways the employer could work out each worker's productivity and pay them a fair wage.

   (d) In adverse selection, we found that the market outcome for health insurance could result in only the least-healthy people getting health insurance and it being very expense. Screening, in which customers agreed to a medical evaluation, and signaling, where customers submitted a medical form, were two possible solutions.

10. (MC, 4 pts) What is a common-pool resource?

   (a) A good that is regulated by the government.

   (b) An excludable, non-rival good.

   (c) An excludable, rival good.

   (d) A non-excludable, non-rival good.

   (e) A non-excludable, rival good.

11. (MC, 4 pts) Which statement best describes the impact of supply and demand shocks?

   (a) A positive supply shock will lower the market price which will lead to a positive demand shock. A positive demand shock will increase the market price, creating profits and entry which will lead to a positive supply shock.

   (b) A positive supply shock will lower the market price and increase market quantity but have no long-term effect on demand. A positive demand shock will increase the market price, creating profits and entry which will lead to a positive supply shock.

   (c) A positive supply shock will lower the market price which will lead to a positive demand shock. A positive demand shock will increase the market price and quantity but have no long-term effect on supply.

   (d) A positive supply shock will lower the market price and increase market quantity but have no long-term effect on demand. A positive demand shock will increase the market price and quantity but have no long-term effect on supply.

12. (MC, 4 pts) The certainty equivalent of a lottery L is a number $CE(L)$ such that $u(CE(L)) = U(L)$. Let $EV(L)$ denote the expected value of L. If, for a given agent, $CE(L) > EV(L)$, what must be true?

   (a) The agent is risk-averse.

   (b) The agent is risk-loving.

   (c) The agent is risk-neutral.

   (d) L has only possible outcome.

   (e) L has exactly two possible outcomes.

END OF MULTIPLE CHOICE QUESTIONS

NEXT 6 QUESTIONS ARE EXERCISES

13. (9 pts) Suppose there are two agents (A and B) and two goods (x and y). Utility functions are $u_A = x_A + y_A$ and $u_B = 2x_B + 2y_B$. A social planner has 9 units of each good.

(a) (2 pts) Write down the feasibility condition for each good.

(b) (2 pts) What allocation would the social planner choose if she was maximizing the Benthamite social welfare function?

(c) (2 pts) What allocation would the social planner choose if she was maximizing the Rawlsian social welfare function? (There are many acceptable answers – give one.)

(d) (3 pts) Describe (in words) all Pareto efficient allocations.

14. (8 pts) There are two firms (A and B) competing in a duopoly. Each has a marginal cost of 20. With $q = q_A + q_B$ denoting total quantity produced, market inverse demand is $p = 90 - q$. *Note: For any numbers a and b, $\frac{d}{dx}(ax) = a$ and $\frac{d}{dx}(x^b) = bx^{b-1}$.*

(a) (1 pt) What is the socially optimal q?

(b) (2 pts) What q will result if the firms are in a cartel?

(c) (3 pts) What q will result if the firms are in Cournot competition?

(d) (2 pts) What q will result if firms are in Bertrand competition? *Hint: If you're smart and/or have good memory, you do not need any math to solve.*

15. (8 pts) There are two agents (A and B) in an exchange economy with two goods (x and y). The two agents have utility functions $u_A = x_A + 2y_A$ and $u_B = 2x_B + y_B$. The endowment is $e = ((75, 25), (25, 75))$. Draw the Edgeworth box (with all proper labeling), mark the endowment point, draw the contract curve, and explain (in a sentence or two) how you knew where the contract curve must be. *Hint: You can draw the precise contract curve without doing much (or any, really) math at all – just think about it!*

16. (8 pts) Suppose there are just two firms in an industry, A and B. Firm A's inverse supply is $p = 2q_A$. Firm B's inverse supply is $p = q_B$.

   (a) (4 pts) Find the formula for inverse market supply and plot it in (q, p)-space. On the same plot, include each of the firm's inverse supply curves.

   (b) (4 pts) Now suppose everything above remains true except that firm B has a shutdown point at $(q_B, p_B) = (4, 4)$. Plot the new market inverse supply. On the same plot, include each of the firm's inverse supply curves, remembering to show and account for Firm B's shutdown point.

17. (12 pts) Suppose supply for a good is given by $p = q$ and demand is given by $p = 100 - 3q$. The government imposes a tax of forty dollars per unit purchased on consumers.

   (a) (4 pts) What is the effective new demand curve, accounting for the tax? Represent it in a plot with the original supply and demand curves, labeling each curve. Also label CS, PS, TR and DWL.

   (b) (4 pts) Calculate CS, PS, TR and DWL. You can leave them as equations without simplifying for the number if you wish – no need to do the math.

   (c) (3 pts) How much of the tax is paid by the consumers and how much by the producers?

   (d) (1 pt) How would your answer to (c) be different if the tax was on producers instead of on consumers?

18. (7 pts) A firm makes two goods (x and y) and has two workers (Alice and Brian). Each worker works a five-hour day (easy, I know!) and Alice can produce eight units of x per hour. For all of the following questions, refer to this production possibility frontier (PPF):
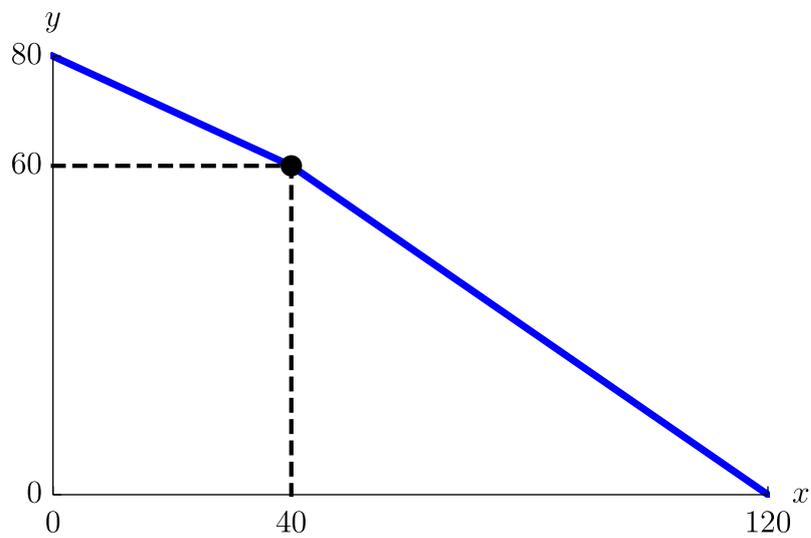
(a) (4 pts) How many units of x can Brian produce per hour? How many units of y can each worker produce per hour?

(b) (3 pts) Who has the absolute advantage in each good? Who has the comparative advantage in each good?