

Economics 101  
Fall 2017  
October 12, 2017  
Midterm 1

Name \_\_\_\_\_  
TA Name \_\_\_\_\_  
Discussion Section # \_\_\_\_\_  
Student ID # \_\_\_\_\_

## Version 1

**DO NOT BEGIN WORKING UNTIL THE INSTRUCTOR TELLS YOU TO DO SO.  
READ THESE INSTRUCTIONS FIRST.**

**YOU WILL RECEIVE 2 BONUS POINTS FOR FOLLOWING ALL DIRECTIONS ON  
THIS COVER SHEET CORRECTLY.**

You have 75 minutes to complete the exam, **including filling in your scantron**. The exam consists of **9 binary choice questions worth 2 points each, and 20 multiple choice questions worth 4 points each for a total of 98 points**. Please accurately and completely provide your **name, ID number, discussion section number, version number, and TA name** on the scantron sheet and the exam booklet for an additional 2 points. Answer all questions on the scantron sheet with a #2 pencil. There are 19 printed pages in this exam, including this cover sheet. **DO NOT PULL THE EXAM APART OR REMOVE THE STAPLE.**

**WARNING: NO COMMUNICATION OR CALCULATING DEVICES, OR FORMULA SHEETS ARE  
ALLOWED. NO CONSULTATION AND CONVERSATION WITH OTHERS ARE ALLOWED WHILE  
YOU ARE TAKING THE EXAM OR IN THE EXAM ROOM. ACADEMIC MISCONDUCT IS A  
SERIOUS OFFENSE AND PUNISHABLE TO THE FULLEST EXTENT.  
PICK THE BEST ANSWER FOR EACH QUESTION.**

**How to fill in the scantron sheet and other information:**

1. Print your last (family) name and first (given) name, in the spaces marked "Last Name," and "First Name." Fill in the corresponding bubbles below.
  2. Print your student ID number in the space marked "Identification Number." Fill in the bubbles.
  3. Write **the number of the discussion section you've been attending** under "Special Codes" spaces ABC, and fill in the bubbles. The discussion numbers can be found at the bottom of this page.
  4. Write the **version number** of your exam booklet under "Special Codes" space D, and fill in the bubble. The version number is at the top of this page.
- If there is an error on the exam or you do not understand something, make a note on your exam booklet and the issue will be addressed AFTER the examination is complete. No questions regarding the exam can be addressed while the exam is being administered.
  - When you are finished, please get up quietly and bring your scantron sheet and this exam booklet to the place indicated by the instructors.

Gary Baker	Andy Lehrer	Zaure (April) Aitkulova	Yiyu Zhang	Wenbo Min
<b>315</b> Tr 3:30-4:20 2319 Sterling	<b>308</b> F 8:50-9:40 B325 Van Vleck	<b>301</b> T 3:30-4:20 B325 Van Vleck	<b>310</b> F 11:00-11:50 B313 Van Vleck	<b>313</b> F 8:50-9:40 B312 Van Vleck
<b>303</b> F 1:20-2:10 386 Van Hise	<b>311</b> F 9:55-10:45 395 Van Hise	<b>306</b> T 4:35-5:25 5322 Soc Sci	<b>305</b> F 12:05-12:55 386 Van Hise	<b>316</b> F 12:05-12:55 224 Ingraham
	<b>307</b> F 11:00-11:50 B309 Van Vleck	<b>312</b> F 9:55-10:45 483 Van Hise	<b>314</b> F 1:20-2:10 374 Van Hise	<b>317</b> F 1:20-2:10 2319 Sterling
	<b>304</b> F 12:05-12:55 482 Van Hise	<b>309</b> F 11:00-11:50 B313 Van Vleck	<b>318</b> F 2:25-3:15 116 Ingraham	<b>302</b> F 2:25-3:15 215 Ingraham

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I, \_\_\_\_\_, agree to neither give nor receive any help on this exam from others. I understand that the use of a calculator or communication device on this exam is academic misconduct. I also understand that providing answers to questions on this exam to other students is academic misconduct, as is taking or receiving answers to questions on this exam 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 will result in a penalty of at least receiving a zero on this exam.

Signed \_\_\_\_\_

**Binary Choice (9 questions each worth 2 points each)**

1) Read the following statements, then choose the correct description of each:

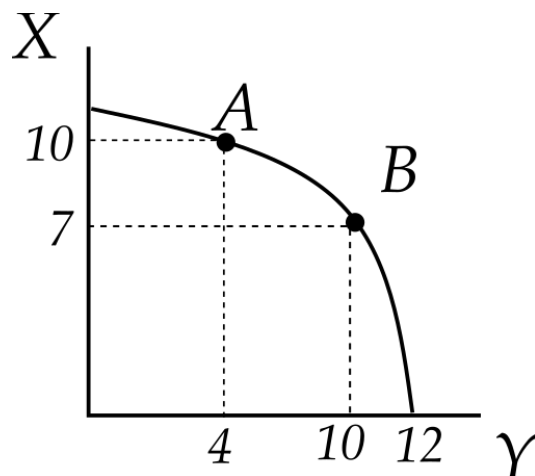
(I) Government provided healthcare increases public expenditures.

(II) Government should provide basic healthcare to all citizens.

a) (I) is a positive economic statement. (II) is a normative statement.

b) (I) is a normative economic statement. (II) is a positive statement.

2) Closely examine the following plot of a PPF:



If you are currently producing at point A, what is the opportunity cost of moving to point B?

a) 3 units of X

b) 6 units of X

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3) Sally earns \$1000 per month working at the UW hospital. Each month she pays \$100 in taxes (regardless of her income). Suppose Sally is given a \$300 per month raise. What is the percent change in her net (after-tax) monthly income?

- a) 33.3%
- b) 30%

4) Alice's initial demand for potatoes can be represented by the following equation where  $Q$  is the quantity of potatoes and  $P$  is the price of potatoes:

$$Q = 4 - P$$

When Alice's income *decreases*, her demand for potatoes changes to the equation:

$$P = 3 - 2Q$$

Given this information and holding everything else constant, we can conclude that potatoes are a/an \_\_\_\_\_ good for Alice.

- a) inferior
- b) normal

5) Suppose that whenever the price of bread increases, we observe that the demand for blueberry jam decreases and the demand for bagels increases. Given this information and holding everything else constant, which of the following statements are correct?

- a) Bread and blueberry jam are complements; bread and bagels are substitutes.
- b) Bread and bagels are complements; bread and blueberry jam are substitutes.

6) Consider the market for cheese curds in Madison. Suppose a plague on the dairy cow population causes a reduction in supply for this year. Which of the following best describes the effect of this plague on the demand for cheese curds?

- a) The plague results in a *shift of* the demand curve.
- b) The results in a *movement along* the demand curve.

7) Consider a market composed of two consumers: Alice and Bob. Their individual demand curves are given by the following equations where  $Q$  is the quantity of hamburgers and  $P$  is the price per hamburger:

Alice's demand for hamburgers:  $P = 6 - Q$

Bob's demand for hamburgers:  $Q = 3 - (1/2)P$

- a) The market demand curve for hamburgers is a straight line.
- b) The market demand curve for hamburgers contains a kink point.

8) Narnia's opportunity cost of producing 1 ton of steel in 2016 was 10 barrels of oil. In 2017 Narnia began using a new, more productive technology for steel production. Everything else being the same, is it true that Narnia's opportunity cost of producing 1 ton of steel in 2017 is 10 barrels of oil?

- a) Yes
- b) No

9) Amy and Chester have linear production possibility frontiers with respect to solving chemistry problems and math problems. Amy can solve 3 chemistry problems or 2 math problems every 2 hours. Chester can solve 4 chemistry problems or 3 math problems every hour. Given this information and holding everything else constant, who has the comparative advantage in solving chemistry problems?

- a) Amy
- b) Chester

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**Multiple Choice (20 questions each worth 4 points each)**

10) Beans are an inferior good and meat is a normal good. A new wage agreement for workers increases the income of many consumers. Given this information and holding everything else constant, how will the equilibrium prices and equilibrium quantities of both goods change relative to their initial levels?

- a) The equilibrium price and the equilibrium quantity of beans will decrease; the equilibrium price and the equilibrium quantity of meat will increase.
- b) The equilibrium price and the equilibrium quantity of both goods will increase.
- c) The equilibrium price and the equilibrium quantity of both goods will decrease.
- d) The equilibrium price and the equilibrium quantity of beans will increase; the equilibrium price and the equilibrium quantity of meat will decrease.

11) Suppose the only input in the production of bicycles and cars is labor. In 2016, Country A uses the same amount of labor in the production of cars as it does in the production of bicycles, resulting in the production of 10,000 cars and 12,000 bicycles. Suppose in 2017, Country A produces an additional 1,000 cars despite no increase in the total amount of labor available in the country. Assuming constant opportunity costs and holding everything else constant, how many bicycles were produced in 2017?

- a) 10,800 bicycles
- b) 11,000 bicycles
- c) 11,800 bicycles
- d) 12,000 bicycles

12) Consider two countries, Smallia and Grandia, that both have linear production possibility frontiers in the production of cars and bicycles. Assume that these are the only two goods that these two countries produce. Smallia can produce either 32 bicycles or 48 cars in 4 days working at the same rate each day and Grandia can produce either 12 bicycles or 8 cars in a single day. Given this information and holding everything else constant, find the equation for the joint PPF for these two countries if they work together for 2 days. Let C be the number of cars and B be the number of bicycles.

- a)  $C = 40 + (-3/2)B$  for B less than or equal to 24  
and  $C = 40 + (-2/3)B$  for B more than 24
- b)  $C = 40 + (-1/3)B$  for B less than or equal to 24  
and  $C = 40 + (-3/2)B$  for B more than 24
- c)  $C = 40 + (-2/3)B$  for B less than or equal to 24  
and  $C = 60 + (-3/2)B$  for B more than 24
- d)  $C = 40 + (-2/3)B$  for B less than or equal to 24  
and  $C = 40 + (-1/2)B$  for B more than 24

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13) Consider Charlie who sells hamburgers. Charlie won't sell any hamburgers if the price is below \$2, but he is willing to supply 2 additional hamburgers for every \$1 increase in the price. Given this information and holding everything else constant, what is the equation for Charlie's supply curve? Assume that  $Q$  is the quantity of hamburgers and  $P$  is the price per hamburger.

- a)  $Q = 2P + 1$
- b)  $Q = 2P - 4$
- c)  $Q = (1/2)P - 1$
- d)  $Q = (1/2)P + 2$

14) The following equations describe the initial demand and supply for basketball jerseys, where  $P$  is the price per jersey and  $Q$  is the quantity of jerseys:

$$\text{Market demand: } P = 110 - (1/2)Q$$

$$\text{Market supply: } P = 1/3 Q$$

Suppose the new season is coming, and the demand for jerseys increases by 80 jerseys at each price level. Given this information and holding everything else constant, which of the following statements is true?

- a) Compared with the initial equilibrium quantity, the new equilibrium quantity increases by 60 jerseys.
- b) Compared with the initial equilibrium quantity, the new equilibrium quantity increases by 32 jerseys.
- c) Compared with the initial equilibrium price, the new equilibrium price remains unchanged.
- d) Compared with the initial equilibrium price, the new equilibrium price increases by \$16 per jersey.

15) Consider a market for wheat in which the government has implemented an effective price support program. Suppose this year, quinoa becomes popular, reducing the demand for wheat at all prices. Holding everything else constant, what is the effect on the cost to the government of this program and the level of consumer expenditure on wheat from this change in demand?

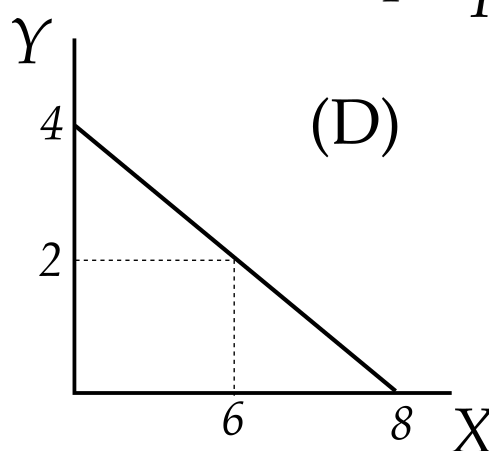
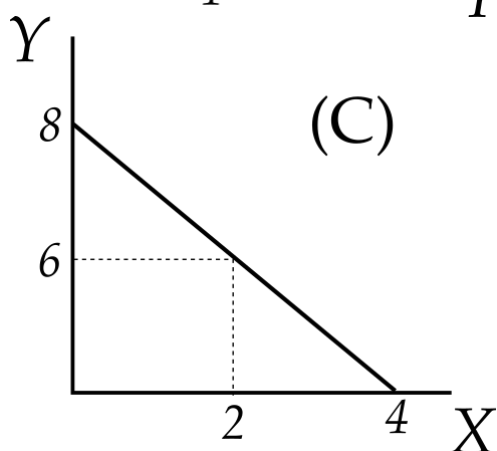
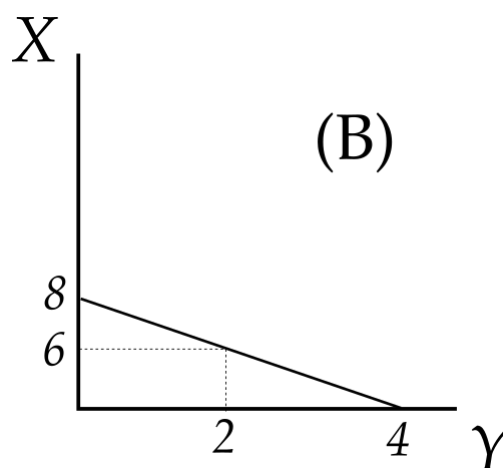
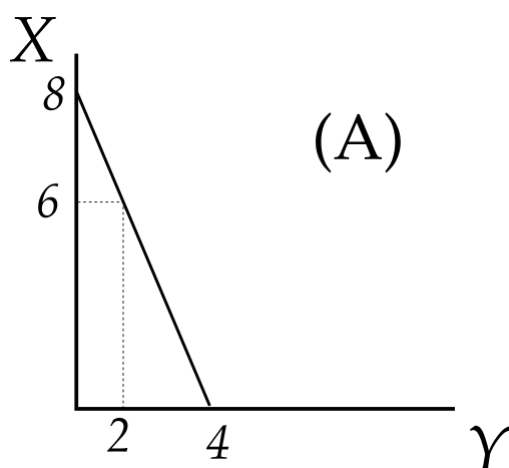
- a) The cost to the government decreases and the level of consumer expenditure on wheat increases.
- b) The cost to the government decreases and the level of consumer expenditure on wheat remains the same.
- c) The cost to the government increases and the level of consumer expenditure on wheat decreases.
- d) Both the cost to the government and the level of consumer expenditure on wheat increase.

16) Suppose widgets and gadgets are substitutes in consumption, but gadgets are required as an input to the production of widgets. Suppose the price of gadgets increases. Given this information and holding everything else constant, how does this affect the equilibrium price and quantity of widgets? Relative to the initial equilibrium price and equilibrium quantity of widgets

- a) The equilibrium price of widgets decreases and the equilibrium quantity of widgets increases.
- b) The equilibrium price of widgets increases and the equilibrium quantity of widgets is indeterminate.
- c) The equilibrium price of widgets is indeterminate and the equilibrium quantity of widgets increases.
- d) The equilibrium price of widgets increases and the equilibrium quantity of widgets decreases.

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17) Which graph below represents **different** information than the other three graphs?



18) The owners of Einstein Bros. Bagels find that when the price for a bagel is \$3, they can sell 80 bagels a day, and for every \$0.20 increase in the price of a bagel, the quantity of bagels they can sell decreases by 8 bagels. Assuming that the demand curve for bagels is linear, which of the following equations represents the demand for their bagels? Assume the  $Q$  is the quantity of bagels and  $P$  is the price per bagel.

- a)  $Q = 320 - 80P$
- b)  $Q = 320 - 40P$
- c)  $Q = 200 - 40P$
- d)  $Q = 200 - 80P$

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19) Maria produces two kinds of goods: solving math problems or watching episodes of her favorite TV shows. Her production possibility frontier for the production of these two goods is linear. Maria has time to solve 5 math problems or watch 10 episodes of her favorite TV shows. Given this information and holding everything else constant, which of the following options is feasible for Maria?

- a) 3 math problems and 6 episodes
- b) 2 math problems and 4 episodes
- c) 5 math problems and 2 episodes
- d) 2 math problems and 8 episodes

20) Consider Alice, Charlie and Donna who each have linear PPFs in the production of paintings and teacups. Suppose Alice has the comparative advantage in the production of paintings, and Donna has the comparative advantage in the production of teacups. Given this information and holding everything else constant, if these three individuals are producing together at a jointly efficient point, which of the following scenarios **cannot** occur?

- a) Alice produces some of both goods, while Donna and Charlie produce only teacups.
- b) Alice produces only paintings, while Donna and Charlie each produce only teacups.
- c) Alice and Charlie both produce only paintings, while Donna produces only teacups.
- d) Alice and Donna both produce only paintings, while Charlie produces some of both goods.

21) Suppose that an economy consists of just two people: Joe and Mary. Both Joe and Mary have the same individual demand curve for coffee. Their individual demand curves are described by the following equations where  $P$  is the price per cup of coffee and  $Q$  is the quantity of cups of coffee:

Joe's demand curve for coffee:  $P = 12 - Q$

Mary's demand curve for coffee:  $P = 12 - Q$

The market supply curve is given by the following equation:

Market supply curve:  $P = (1/2)Q$

Suppose the Mary's income increases and she now can afford and therefore demands 4 more cups of coffee at every price. Given this information and holding everything else constant, what will happen to the quantity of coffee Joe demands?

- a) Joe's consumption increases by 3 cups of coffee.
- b) Joe's consumption increases by 1 cup of coffee.
- c) Joe's consumption decreases by 1 cup of coffee.
- d) Joe's consumption decreases by 3 cups of coffee.

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Use the following information for the next three (3) questions:

Apple released its new iPhone in September. The following equations describe the market demand and the market supply for this new product in Madison, where P is the price and Q is the quantity of iPhones:

$$\text{Market Demand: } Q = 4000 - 4P$$

$$\text{Market Supply: } Q = P$$

22) When this market is in equilibrium, which statement is true?

- a) Consumer surplus is less than \$50,000
- b) Producer surplus is more than twice as large as consumer surplus.
- c) Total surplus is more than \$500,000.
- d) Producer surplus is between \$200,000 and \$300,000.

23) Suppose the government imposes a price ceiling of \$600 in this market. What is the deadweight loss, if any, from the implementation of this policy?

- a) \$25,000
- b) \$0
- c) \$50,000
- d) \$120,000

24) Consider the policy described in the last question. Which statement is true about this price control policy?

- a) Both consumers and Apple are winners from the implementation of this price ceiling.
- b) Only consumers are winners from the implementation of this price ceiling.
- c) Only Apple is a winner from the implementation of this price ceiling.
- d) Both consumers and Apple are losers from the implementation of this price ceiling.

25) Suppose a draught in Ruritania, the main producer of flax seeds, caused a major reduction in the quantity of flax seeds produced. At the same time, a major recession causes many people to lose their jobs. As a result of this recession, people cut back on their consumption of flax seeds. Assume that the demand curve for flax seed is downward sloping and that the supply curve for flax seed is upward sloping. Given this information and holding everything else constant, what is the impact of these two events on the market for flax seed?

- a) Both the price and quantity decrease relative to their initial levels.
- b) The new price's relationship to the initial price level cannot be determined but the quantity decreases relative to its initial level.
- c) The price increases and the quantity increases relative to their initial levels.
- d) The price decreases relative to its initial level but the new quantity's relationship to the level of the initial quantity cannot be determined.

Use the following information to answer the next three (3) questions.

In the market for corn, consumers are willing to buy 10 tons of corn for a price of \$230 per ton and farmers are willing to sell 10 tons for a price of \$5 per ton. It is also known that consumers are willing to buy 120 tons for \$10 and farmers are willing to sell 120 tons for \$60. You are also told that the demand and the supply curves for corn are linear.

26) Given the above information and holding everything else constant, what is the equilibrium quantity and equilibrium price of corn?

- a)  $Q = 100$  tons of corn and  $P = \$50$  per ton of corn
- b)  $Q = 120$  tons of corn and  $P = \$60$  per ton of corn
- c)  $Q = 90$  tons of corn and  $P = \$45$  per ton of corn
- d) The equilibrium cannot be determined from the given information.

27) The government decides to implement a price support program for corn. The government implements a price floor of \$60. Given this information and holding everything else constant, what will be the cost of the program to the government? Assume there are no storage costs associated with this program.

- a) \$1250
- b) \$1000
- c) \$1200
- d) \$1500

28) Which of the following is **true** after the price support program has been implemented?

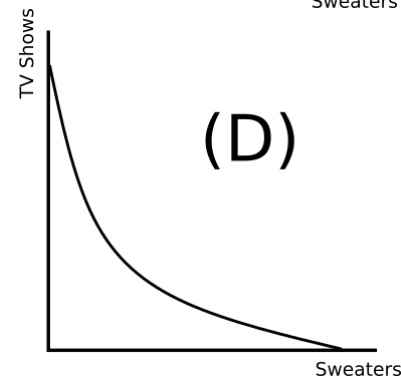
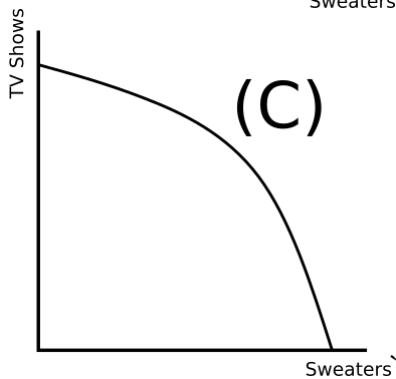
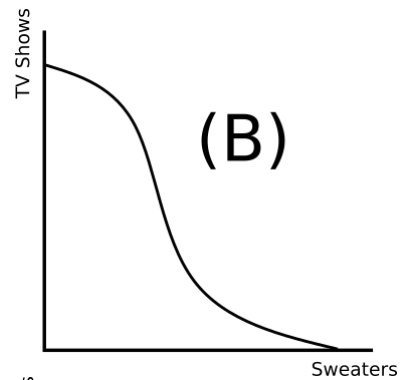
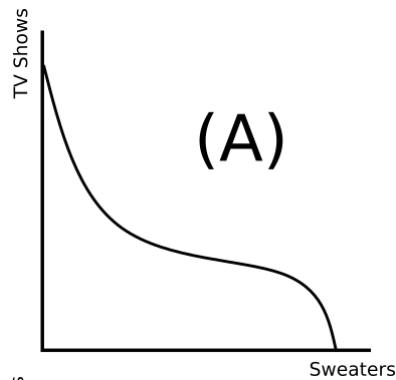
- a) Consumers pay more for corn than they did initially, but they also get more corn once the program is implemented.
- b) Total Farmer revenue has increased as a result of the implementation of this program.
- c) With the implementation of this program, less corn will be produced.
- d) Total Farmer revenue as a result of the program is less than the cost to the government of this program.



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29) William can devote his time to either watching TV Shows or knitting sweaters. It always takes 1 hour to watch one TV show. William becomes more skilled as he knits more sweaters, so, for example, his 1st sweater takes 3 hours, but his 5th sweater only takes 1 hour. However, if he knits too much, he starts to tire, and knits more slowly, so, for example, his 15th sweater takes 2 hours.

Given the above information, which of the following graphs could represent William's PPF of TV shows and sweaters?



**END OF EXAM!**

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