

Economics 101	Name _____
Spring 2018	TA Name _____
February 27, 2018	Discussion Section # _____
Midterm 1	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 and the exam booklet information at the top of this page.** 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 17 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	Annie Lee	Zaure (April) Aitkulova	Yiyou Zhang
363 Tr 4:35-5:25 4314 Soc Sci	370 F 12:05-12:55 586 Van Hise	362 Tr 4:35-5:25 5322 Soc Sci	367 F 9:55-10:45 240 Van Hise
365 F 11:00-11:50 390 Van Hise	364 F 1:20-2:10 6322 Soc Sci	368 F 8:50-9:40 6322 Soc Sci	366 F 11:00-11:50 B325 Van Vleck
	360 F 2:25-3:15 4308 Soc Sci	361 F 9:55-10:45 227 Van Hise	369 F 12:05-12:55 144 Van Hise

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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 (worth 2 points each)

1) Suppose, in some market, demand shifts in, and, at the same time, supply shifts in. Then it must be the case that

- a) The equilibrium quantity falls.
- b) The equilibrium price increases.

2) Suppose both Country A and Country B produce apples and bananas. Assume that both countries have linear production possibility frontiers in the production of these two goods. If Country A sells apples to Country B for 1 banana per apple (suppose both countries strictly benefit from this trade), which of the following could be the opportunity cost of bananas for Country B?

- a) 2 apples per banana
- b) 1/2 apples per banana

3) Consider the following statement:

“We should support a minimum wage policy because it increases average income.”

Is this statement positive or normative?

- a) The statement is positive.
- b) The statement is normative.

4) Suppose beer and cheese curds are complements. Suppose the free-market equilibrium price of cheese curds is \$5 per serving, and the government implements a price guarantee program in this market such that the producers of cheese curds now receive a price of \$10 (that is, the government subsidizes the sale of cheese curds). Given this information and holding everything else constant, how will the equilibrium price of beer react?

- a) The equilibrium price of beer will increase.
- b) The equilibrium price of beer will decrease.

5) Consider the following two supply curves where P is the price per unit and Q is the number of units:

Supply Curve A: $P = Q - 1$

Supply Curve B: $P = Q - 5$

Which of the following statements about the horizontal summation of these two curves is **true**? (As usual, restrict your attention to the first quadrant – i.e. where both price and quantity are positive.)

- a) The horizontal summation of these two supply curves has a kink point.
- b) The horizontal summation of these two supply curves has no kink point.

6) Alex can eat 5 cones of ice-cream or 4 doughnuts in one hour. Ben can eat 6 cones of ice-cream or 9 doughnuts in one hour. Choose the correct option.

- a) Alex has a comparative advantage in eating doughnuts.
- b) Ben has a comparative advantage in eating doughnuts.

7) Due to an economic downturn, average income recently fell by 5%. Following this, the demand for widgets increased by 2%. Given this information, we can conclude that widgets are

- a) an inferior good.
- b) a normal good.

8) Suppose chicken sandwiches and cheeseburgers are substitutes in consumption. After a change in the price of chicken sandwiches, we observe that the equilibrium price of cheeseburgers has gone up. Given this information, what can we conclude about the change in the price of chicken sandwiches?

- a) The price of chicken sandwiches went up.
- b) The price of chicken sandwiches went down.

9) In June, Erika could make either 15 cookies or 60 brownies in one day. In July, she started using better ingredients and could now make either 20 cookies or 75 brownies in one day. Choose the correct option.

- a) Erika's opportunity cost of producing cookies was higher in July than in June.
- b) Erika's opportunity cost of producing brownies was higher in July than in June.

Multiple Choice (worth 4 points each)

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

Consider the market for carrots, which can be characterized by the following demand and supply equations, where Q is the quantity and P is the price of carrots:

Demand: $Q = 20 - (1/6) P$

Supply: $Q = (1/2) P$

10) Calculate the value of consumer surplus (CS) and producer surplus (PS) when the market is in equilibrium.

- a) CS = \$1,350; PS = \$450
- b) CS = \$675; PS = \$225
- c) CS = \$1,800; PS = \$600
- d) CS = \$900; PS = \$300

11) The government implements a price support program where it sets a price floor and the government agrees to buy any surplus carrots in the market at this price floor price. The quantity of carrots bought by consumers is 14 carrots after the implementation of this program. 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) \$72
- b) \$144
- c) \$180
- d) \$432

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

- a) Consumer surplus will decrease compared with the initial equilibrium.
- b) The new price of carrots is 1.5 times higher than the initial equilibrium price.
- c) With the implementation of this program, fewer carrots will be produced.
- d) Producer surplus with the price support program is less than the cost of this price support program to the government.

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13) The market for comic books consists of two buyers (Gary & Annie) and one seller. The buyers' individual demand curves are described by the following equations where P is the price per book and Q is the quantity of books:

Annie's demand curve: $P = 10 - Q$

Gary's demand curve: $P = 5 - Q$

The seller has a supply curve given by:

Seller's supply curve: $P = 4 + (1/2)Q$

Which of following gives the correct equilibrium price (P^*) and quantity (Q^*) in this market?

- a) $P^* = \$4$ per book; $Q^* = 6$ books
- b) $P^* = \$5$ per book; $Q^* = 5$ books
- c) $P^* = \$6$ per book; $Q^* = 4$ books
- d) $P^* = \$8$ per book; $Q^* = 6$ books

14) Suppose A, B, and C are all working on homework together. Assume that their individual PPFs are linear. In one hour, A can solve either 4 math problems or 2 econ problems. In one hour, B can solve either 3 math problems or 6 econ problems. In two hours, C can solve either 4 math problems or 6 econ problems. If the three efficiently work together on these problems, which of the following **cannot** happen?

- a) A, B, and C all produce only math problems.
- b) A and C produce only math problems, and B only produces econ problems.
- c) A produces only math problems, B produces only econ problems, and C produces some of both types of problems.
- d) A and B only produce econ problems, and C only produces math problems.

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

In Country A the demand and supply curves for the market for cars can be described by the following equations where P is the price per car and Q is the quantity of cars:

$$\text{Demand: } P = 20 - (1/2)Q$$

$$\text{Supply: } P = (1/2)Q$$

15) Suppose the government faces deteriorating roads and wishes to reduce the number of cars on the road through the imposition of a price floor on cars. What price floor will result in a total reduction of 8 cars sold relative to the equilibrium market quantity when there is no government intervention in this market? The government should set the price floor to a price of

- a) \$2 per car
- b) \$6 per car
- c) \$12 per car
- d) \$14 per car

16) The government now realizes it can reduce the number of cars and raise some revenue to fix the roads by imposing an excise tax instead of a price floor. What excise tax will give the same reduction of 8 fewer cars than the initial market equilibrium quantity being sold?

- a) An excise tax of \$4 per car.
- b) An excise tax of \$6 per car.
- c) An excise tax of \$8 per car.
- d) An excise tax of \$14 per car.

17) Suppose the government wishes to impose an excise tax on cars that earns at least \$100 in revenue. Which one of the following excise taxes would achieve that revenue goal?

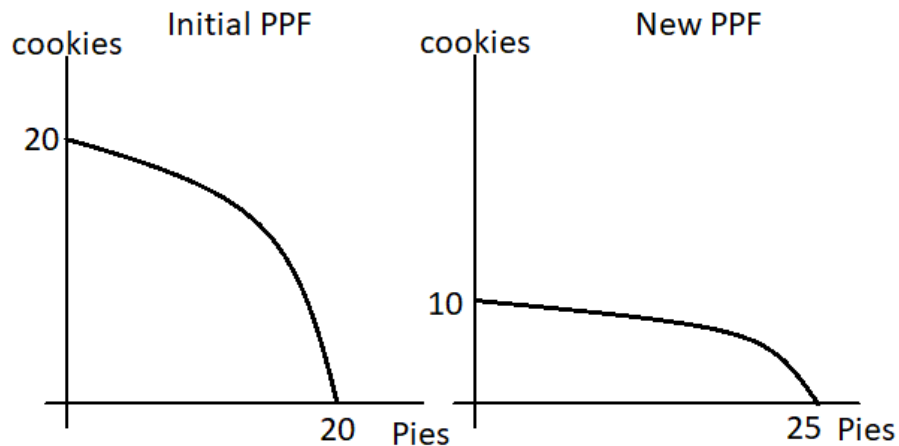
- a) An excise tax of \$5 per car
- b) An excise tax of \$8 per car
- c) An excise tax of \$10 per car
- d) An excise tax of \$15 per car

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18) Consider the market for Turkish Delight in Narnia. The supply of Turkish delight is initially given by $Q = P - 4$, and the initial equilibrium price is \$10. Now, a new confectionary technology reduces the cost of producing Turkish delight such that the supply curve shifts vertically down by 4 units. After this change, the new equilibrium price is \$8. Suppose the demand curve is linear and unchanged by this new technology. Given this information and holding everything else constant, which of the following equations expresses the demand for Turkish delight in Narnia?

- a) $P = 16 - 2Q$
- b) $Q = 8 - P$
- c) $P = 16 - Q$
- d) $Q = 3P + 8$

19) Sally can spend her time making either pies or cookies. Which of the following scenarios could explain the following change in Sally's PPF?



- a) Sally gets a new mixer that improves her ability to make both cookies and pies.
- b) Sally gets a new pie dish that improves her ability to make pies, but accidentally breaks her favorite cookie sheet, reducing her ability to make cookies.
- c) Sally gets a new pie dish that improves her ability to make pies but is useless for cookies.
- d) Sally gets a new cookie sheet that improves her ability to make cookies, but accidentally breaks her favorite pie dish, reducing her ability to make pies.

20) Consider a normal market with a downward-sloping demand curve and an upward-sloping supply curve. Which of the following cases would *definitely* result in a *decrease* in consumer surplus? For each case, assume that the market is initially in equilibrium and that everything else is held constant except for the change described in the case.

Case 1: The supply curve shifts to the left.

Case 2: The supply curve shifts to the right.

Case 3: The government imposes an effective price ceiling.

Case 4: The government imposes an excise tax.

- a) Only Case 1
- b) Only Case 4
- c) Both Cases 1 and 4
- d) Cases 2, 3, and 4

21) Which of the following scenarios will cause the equilibrium price of wine to move in a direction different than the other three scenarios?

- a) New research comes out claiming wine reduces the risk of cancer.
- b) The price of grapes (an input into the production of wine) increases.
- c) Income falls, and wine is a normal good.
- d) The price of beer (a substitute for wine) increases.

22) Consider the market for tomatoes. Suppose a severe draught makes it much harder to grow tomatoes, and, at the same time, a new tomato juice fad starts causing people to want to buy more tomatoes. Holding everything else constant, which of the following describes the change in equilibrium price and quantity following this change?

- a) The equilibrium price of tomatoes increases, and the equilibrium quantity of tomatoes decreases relative to the initial equilibrium.
- b) The equilibrium price of tomatoes increases, and the change in the equilibrium quantity of tomatoes is indeterminate relative to the initial equilibrium.
- c) The change in the equilibrium price of tomatoes is indeterminate, and the equilibrium quantity of tomatoes decreases relative to the initial equilibrium.
- d) The change in both the equilibrium quantity and the equilibrium price of tomatoes are indeterminate relative to the initial equilibrium.

23) Suppose the demand and supply for cheese curds is given by the following equations where P is the price per unit of cheese curds and Q is the number of units of cheese curds:

$$\text{Demand: } P = 15 - 3Q$$

$$\text{Supply: } P = Q + 3$$

If the government imposes an excise tax of \$4, what will be the resulting consumer tax incidence (CTI)?

- a) CTI = \$0
- b) CTI = \$3
- c) CTI = \$6
- d) CTI = \$8

Use the following information for the following three (3) questions.

Suppose the market for blueberries is described by the following supply and demand equations where P is the price per unit of blueberries and Q is the number of units of blueberries:

$$\text{Demand: } P = 30 - Q$$

$$\text{Supply: } Q = (1/2)P$$

The government believes that the consumption of blueberries improves the health of its population, and thus imposes a price ceiling of \$10 for blueberries. At the same time, the government plans to implement one of the following two options:

Option 1: The government will import blueberries and sell them to consumers at a price of \$10 in order to meet the excess demand for blueberries resulting from the price ceiling.

Option 2: The government will subsidize private suppliers of blueberries such that suppliers can meet the demand for blueberries under the price ceiling.

24) Before either option 1 or option 2 are implemented, what are the values of consumer surplus (CS), producer surplus (PS), and deadweight loss (DWL) when this price ceiling is implemented in this market?

- a) CS = \$200; PS = \$25; DWL = \$75
- b) CS = \$87.50; PS = \$25; DWL = \$37.50
- c) CS = \$175; PS = \$50; DWL = \$150
- d) CS = \$112.50; PS = \$112.50; DWL = \$0

25) Which of the following statements are true about the two policy options the government is considering?

- a) Consumers in this country are indifferent between the two options the government is considering. Producers in this country strictly prefer option 2.
- b) Consumers in this country strictly prefer option 1. Producers in this country strictly prefer option 2.
- c) Consumers in this country strictly prefer option 2. Producers in this country are indifferent between the two options that the government is considering.
- d) Both consumers and producers in this country are indifferent between the two options that the government is considering.

26) What is the size of the subsidy per unit required for option 2? A subsidy of

- a) \$5 per unit of blueberries is required.
- b) \$15 per unit of blueberries is required.
- c) \$20 per unit of blueberries is required.
- d) \$30 per unit of blueberries is required.

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Use the following information for the next two (2) questions.

Elise and Natalia spend their free time either watching their favorite show or playing tennis. If Natalia only watches shows, she can watch 20 episodes in a day. If she only plays tennis, Natalia can play 10 matches a day. If Elise only watches shows, she can watch 40 episodes in a day. If Elise only plays tennis, she can play 25 matches a day.

27) Which of the following production bundles is feasible for Natalia?

- a) 0 tennis matches and 5 TV shows
- b) 0 tennis matches and 25 TV shows
- c) 10 tennis matches and 10 TV shows
- d) 5 tennis matches and 15 TV shows

28) Let T denote the number of tennis matches, and S denote the number of shows watched. What is the equation for Natalia and Elise's joint PPF?

- a) $S = 60 - (8/5)T$ for $T < 25$
 $S = 70 - 2T$ for $T \geq 25$
- b) $S = 60 - (8/5)T$ for $T < 25$
 $S = 64 - (8/5)T$ for $T \geq 25$
- c) $S = 60 - 2T$ for $T < 10$
 $S = 56 - (8/5)T$ for $T \geq 10$
- d) $S = 60 - 2T$ for $T < 25$
 $S = 56 - (8/5)T$ for $T \geq 25$

29) Consider a market for two types of workers: high skill and low skill. Suppose high skill workers and low skill workers are substitutes for one another. The equilibrium wage of high-skill workers is \$15 per hour, and the equilibrium wage of low-skill workers is \$7 per hour. If the government implements a minimum wage (for workers of all skill levels) of \$10, which of the following would be consequences of this policy?

- I: The equilibrium quantity of low-skilled workers hired will decrease.
- II: The equilibrium quantity of high-skilled workers hired will increase.
- III: The equilibrium wage of high-skilled workers will be unaffected.
- IV: The equilibrium wage of low-skilled workers will increase.

- a) Only III will occur.
- b) Only I and IV will occur.
- c) Only I, III, and IV will occur.
- d) Only I, II, and IV will occur.

END OF EXAM