

Economics 101	Name _____
Spring 2019	TA Name _____
February 26, 2019	Discussion Section # _____
Midterm Exam 1	Student ID # _____

**VERSION 1**

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

You have 75 minutes to complete the exam, **including filling in your scantron**. The exam consists of **33 multiple choice questions worth 3 points each for a total of 99 points**. The last point is administrative and earned by accurately and completely providing your **name, ID number, discussion section number, version number, and TA name** on the scantron sheet and the exam booklet. Answer all questions on the scantron sheet with a #2 pencil. There are 23 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 name and first 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 last page of this exam.
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.

**Example:** If you are registered for section 341 and it says "VERSION 2" at the top of this page, your "Special Codes" should read 3412.

- **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.**

Erika Frost	Laura Boisten	Hiroaki Shirai
<b>341</b> F 11:00 – 11:50 am Van Hise 575	<b>346</b> F 11:00 – 11:50 am Van Hise 495	<b>351</b> Tr 3:30 – 4:20 pm Soc Sci 5322
<b>348</b> F 12:05 – 12:55 Ingraham 222	<b>347</b> F 12:05 – 12:55 pm Ingraham 224	<b>352</b> Tr 4:35 – 5:25 pm Soc Sci 6224
	<b>340</b> F 1:20 – 2:10 pm Soc Sci 6224	<b>343</b> F 8:50 – 9:40 am Van Hise 207
		<b>349</b> F 9:55 – 10:45 am Van Hise 240

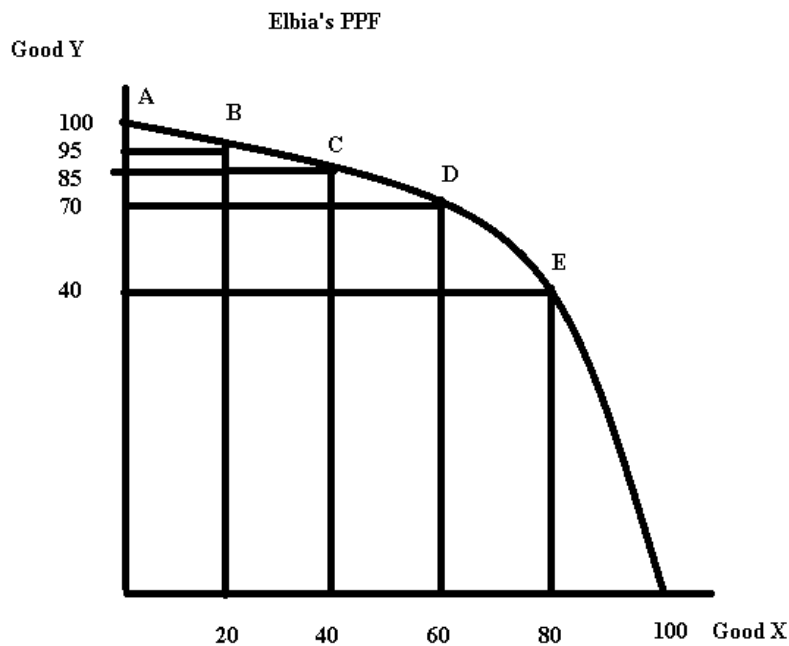
WORKSHEET – DO NOT REMOVE!

EXAM CONTINUES ON NEXT PAGE! THERE ARE 33 QUESTIONS!

I, \_\_\_\_\_, agree to neither give nor receive any help on this exam from other students. Furthermore, I understand that use of a calculator on this exam is an academic misconduct violation. I also understand that failure to cover my answers is academic misconduct: it is important that I maintain the integrity of my work and that I do not make it available to other students.

Signed \_\_\_\_\_

1. Use the graph below of Elbia's PPF to answer the following question.



Suppose that Elbia is currently producing 37 units of Good Y. If Elbia decides to produce one more unit of Good Y than we can measure the opportunity cost of this additional production as approximately equal to:

- a. 2 units of Good Y.
- b. 20 units of Good Y.
- c. 0.5 units of Good X.
- d. 28 units of Good Y.

2. Consider a market where an effective price floor has been enacted. Which of the following statements is true given this price floor?
- Producers of this good will benefit from the enactment of this price floor.
  - Consumers will capture part of the producers' original producer surplus with the enactment of this price floor.
  - Since the enactment of this price floor results in consumers gaining a portion of the original producer surplus, consumers will support the enactment of this price floor.
  - Relative to the initial equilibrium price, the enactment of this price floor will result in consumers paying a lower price for the good.

3. You are given the following information:

Price	Quantity Demanded	Quantity Supplied
\$1	20	10
\$2	16	13
\$3	12	16
\$4	8	19

Given the above information and holding everything else constant, how many of the following statements are true?

- The equation for the demand curve in x-intercept form is:  $Q = 6 - (1/4)P$ .
  - The equilibrium price must be greater than \$2.
  - The equilibrium quantity must be less than 16 units.
- One statement is true.
  - Two statements are true.
  - Three statements are true.
  - None of the statements are true.

WORKSHEET – DO NOT REMOVE!

EXAM CONTINUES ON NEXT PAGE! THERE ARE 33 QUESTIONS!

Use the information below to answer the **next two (2)** questions.

Suppose there is a market with three individuals. We know their individual demand curves and they are given by the following equations where  $P$  is the price of the good and  $Q$  is the quantity of the good:

Bob's demand curve for the good:  $Q = 10 - P$

Ann's demand curve for the good:  $Q = 10 - 2P$

Tom's demand curve for the good:  $Q = 4 - (1/2)P$

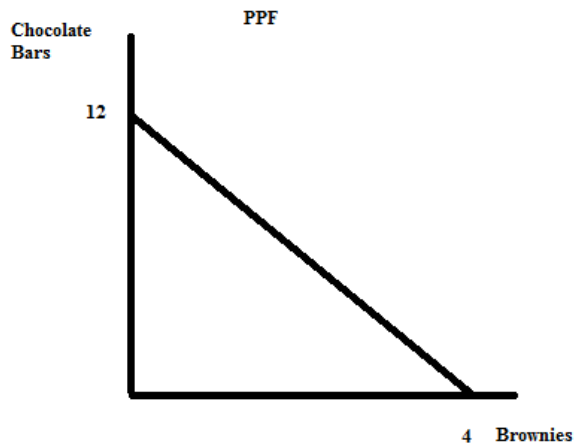
4. Given this information and holding everything else constant:
  - a. If the price is between \$5 and \$8 then only Bob and Tom will have a demand for the good.
  - b. If the price is between \$5 and \$10 then only Bob and Ann will have a demand for the good.
  - c. If the price is between \$5 and \$8 then only Tom and Ann will have a demand for the good.
  - d. If the price is less than \$8 then all three of these individuals will have a demand for the good.
  
5. Given this information and holding everything else constant, how many of the following statements are true?
  - The market demand curve will have three kink points.
  - One of the kink points for this market demand curve is  $(Q, P) = (6.5, 5)$ .
  - If the price of the good in the market was \$4 per unit then the total quantity demanded at this price would be 14 units.
  - If the price is \$4.50 then all three of these individuals have a demand for the good.
  - a. One statement is true.
  - b. Two statements are true.
  - c. Three statements are true.
  - d. Four statements are true.

6. Ann can make 100 dozen cookies in a day or 50 pies in a day or any combination of cookies and pies that lie on the straight line that contains these two points. Joe can make 40 dozen cookies in a day or 50 pies in a day or any combination of cookies and pies that lie on the straight line that contains these two points. Given this information and holding everything else constant, if Joe and Ann decide to trade with one another then:
- Ann is willing to pay 12 dozen cookies for 5 pies and Joe is willing to accept this offer.
  - Joe is willing to accept 8 dozen cookies for 5 pies and Ann is willing to make this offer.
  - Joe is willing to pay 3 dozen cookies for 5 pies but Ann is not willing to accept this offer.
  - Ann is willing to sell 5 pies for 6 dozen cookies but Joe is not willing to accept this offer.

7. Which of the following statements about a model are true?

- A model represents reality.
  - A model is a way to explore a question we have about the world.
  - To be helpful a model must be able to fit the existing data as well as the incoming data.
  - Over time a model may be discarded once new data becomes available.
- One statement is true.
  - Two statements are true.
  - Three statements are true.
  - Four statements are true.

Consider the following PPF graph for the **next two (2)** questions depicting chocolate bars on the vertical axis and brownies on the horizontal axis.



8. Given the above graph and holding everything else constant, which of the following points is **feasible but inefficient**?
- a. 3 brownies and 3 chocolate bars
  - b. 2 brownies and 7 chocolate bars
  - c. 1 brownie and 8 chocolate bars
  - d. 1.5 brownies and 8 chocolate bars
9. Given the above graph and holding everything else constant, which of the following points is **not feasible**?
- a. 2 brownies and 5.5 chocolate bars
  - b. 2.5 brownies and 4.5 chocolate bars
  - c. 1 brownie and 8 chocolate bars
  - d. 3.5 brownies and 2 chocolate bars

10. Consider a good with a downward sloping demand curve. Which of the following changes will cause the demand curve to shift to the right?

- a. Incomes increase and the good is an inferior good.
- b. The price of labor, an input in the production of the good, decreases.
- c. The price of the good decreases.
- d. The price of a substitute good in consumption increases.

11. Laura would like to go on vacation for two days. If she goes on vacation, she will have to pay \$200 for a flight, \$150 for a hotel and \$50 for food. If Laura does not go on vacation she will spend \$50 on food during this two day period of time. Furthermore, if Laura goes on vacation she will have to take unpaid vacation days. If she were to work these two days, she would make a total of \$300. What is the opportunity cost of Laura's vacation?

- a. \$700
- b. \$650
- c. \$500
- d. \$0

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

The market for peanuts can be described by the following demand and supply equations where  $P$  is the price per unit of peanuts and  $Q$  is the number of units of peanuts:

$$\text{Market Demand for Peanuts: } P = 800 - (1/2)Q$$

$$\text{Market Supply of Peanuts: } P = (1/2)Q - 600$$

12. Given this information and holding everything else constant, how many of the following statements are true?

- Suppose that the government does not intervene in this market in any way. The market will sell the good at its equilibrium price.
  - Intervention in this market with an effective price support program will increase consumer surplus.
  - Suppose the farming year turns out to be a very good year for farming and therefore overall production of peanuts increases at every price. Our economics model and the provided information would predict that overall farm income would fall given this change in production.
  - An effective price floor or government subsidy in this market would increase the overall level of farm income.
- a. One statement is true.  
b. Two statements are true.  
c. Three statements are true.  
d. Four statements are true.

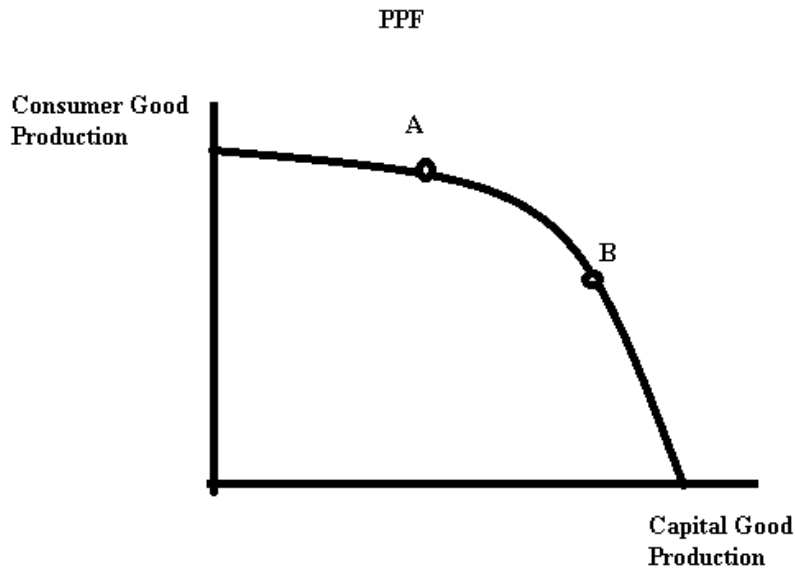
13. The government decides to implement a price support program in this market. The government sets the price floor at \$200 per unit of peanuts and agrees that it will purchase any surplus that occurs at this price floor price. Given this information and holding everything else constant, how many of the following statements are true?

- Consumer expenditure on peanuts with this price floor program will be \$24,000.
  - Government expenditure on peanuts with this price floor program will be \$80,000.
  - If farmers have a very good year and the overall production of peanuts increases at every price, then government expenditure on this price floor program will increase.
  - If farmers have a very good year and the overall production of peanuts increases at every price, then consumers with this price floor program will consume a smaller quantity of peanuts.
- a. One statement is true.  
b. Two statements are true.  
c. Three statements are true.  
d. Four statements are true.

14. Suppose the government decides to implement a price guarantee program instead of a price support program in this market. The government decides to guarantee farmers a price of \$150 per unit of peanuts that they sell. Given this program and holding everything else constant, the government will need to pay farmers a subsidy of \_\_\_\_\_ per unit of peanuts sold when this price guarantee program is implemented.
- a. \$50
  - b. \$75
  - c. \$100
  - d. \$125

EXAM CONTINUES ON NEXT PAGE! THERE ARE 33 QUESTIONS!

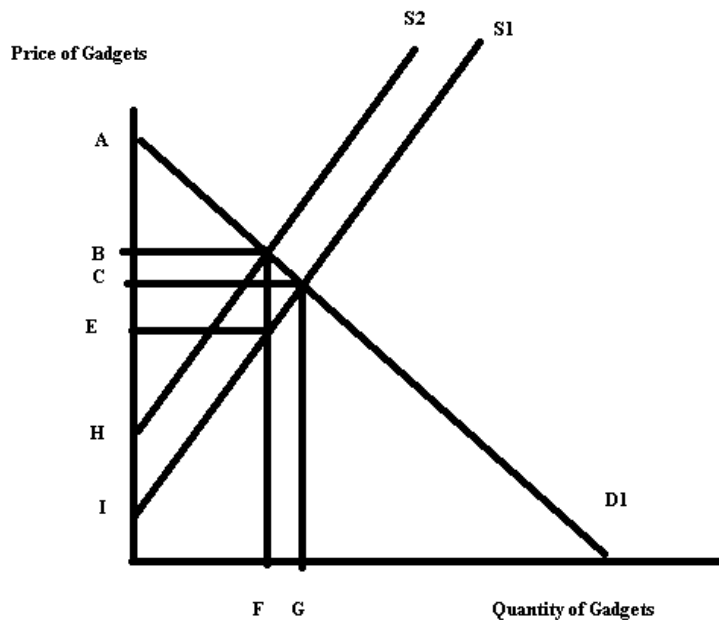
15. Assume that a country is debating whether to produce at point A or point B on their production possibility frontier which is depicted in the following graph.



Suppose that a primary goal for this country is to have strong economic growth. Given this goal and holding everything else constant, which of the following statements will be most successful in helping this country reach its goal?

- a. This country will grow faster if point A is chosen as the production point since high levels of current consumption will likely lead to high levels of future consumption.
  - b. This country will grow faster if point B is chosen since enhanced capital good production this year will enhance the future production possibilities of this country.
  - c. The selection of point A or point B is irrelevant in determining this country's future economic growth. This country should choose its production point this year by deciding which point yields the greatest level of satisfaction for the country.
  - d. The country will grow faster if point A is chosen since it provides for a high level of capital good production while also providing a high level of consumer good production.
16. Which of the following will **NOT** shift the demand curve for brownies to the right?
- a. an increase in the price of cupcakes, a substitute for brownies
  - b. a decrease in the price of milk, a complement of brownies
  - c. an increase in the price of brownies
  - d. an increase in income for all buyers and assuming that brownies are normal goods

17. Consider the graph below which depicts the market for gadgets. D1 and S1 are the initial demand and supply curves, respectively. S2 is the new supply curve once an excise tax is implemented in this market.



Given the above information and holding everything else constant, the economic incidence of this excise tax will fall more heavily on consumers than producers if:

- Distance (B – C) is greater than distance (C – E).
  - Distance (A – C) is greater than distance (C – I).
  - Distance (A – B) is greater than distance (C – H).
  - Distance (C – E) is greater than distance (H – I).
18. Consider the market for chocolate to be initially in equilibrium. How would an increase in the price of coco beans, an input in the production of chocolate affect the equilibrium price and quantity of chocolate? Given this information and holding everything else constant,
- the equilibrium price of chocolate will increase and the equilibrium quantity of chocolate will increase.
  - the equilibrium price of chocolate will increase and the equilibrium quantity of chocolate will decrease.
  - the equilibrium price of chocolate will decrease and the equilibrium quantity of chocolate will increase.
  - the equilibrium price of chocolate will decrease and the equilibrium quantity of chocolate will decrease.

19. Consider the following demand curves for April and Erika for gummy bears. Suppose April and Erika are the only consumers of gummy bears.

April's Demand Curve :  $Q = 2 - P$

Erika's Demand Curve:  $Q = 4 - P$

Suppose Erika and April consume a total of 4 gummy bears in this market. Given this information and holding everything else constant, what is the market price for a gummy bear?

- a. \$0
- b. \$1
- c. \$2
- d. \$3

20. Consider the market for widgets which is initially in equilibrium and can be described by the following demand and supply curves where  $P$  is the price per widget and  $Q$  is the quantity of widgets:

Market Demand Curve:  $P = 20 - (1/2)Q$

Market Supply Curve:  $P = 2 + (1/2)Q$

The government decides to implement an excise tax in this market and after the implementation of this tax the quantity of widgets sold in this market is 14 widgets. Given this information and holding everything else constant, the excise tax per unit is equal to:

- a. \$2 per unit
- b. \$3 per unit
- c. \$4 per unit
- d. \$5 per unit

WORKSHEET – DO NOT REMOVE!

EXAM CONTINUES ON NEXT PAGE!

Answer the **next three (3)** questions based on the following information.

Suppose there exists a market for iPhones. The supply and the demand curves in this market are given by the following equations where  $P$  is the price per iPhones measured in dollars and  $Q$  is the quantity of iPhones:

$$\text{Demand Curve: } P = 1200 - 3Q$$

$$\text{Supply Curve: } P = Q + 400$$

21. Given the above information and holding everything else constant, find the equilibrium price and quantity in this market.

- a.  $(Q, P) = (100, 500)$
- b.  $(Q, P) = (200, 600)$
- c.  $(Q, P) = (150, 750)$
- d.  $(Q, P) = (250, 650)$

22. Suppose the demand curve for iPhones does not change. Apple, the manufacturer of iPhones, improves the efficiency of the factories that produce iPhones. The new supply curve for iPhones is represented by the following equation:

$$\text{Supply Curve: } Q = P - 200$$

Given this information and holding everything else constant, what would be the change in the equilibrium number of iPhones relative to the initial equilibrium quantity of iPhones?

- a. an increase of 10 iPhones
- b. an increase of 25 iPhones
- c. an increase of 50 iPhones
- d. an increase of 75 iPhones

23. Which of the following expressions accurately measures the value of consumer surplus, CS, in this market after this technological change?

- a.  $CS = (1/2)(\$1200/\text{iPhone} - \$450/\text{iPhone})(250 \text{ iPhones})$
- b.  $CS = (1/2)(\$1200/\text{iPhone} - \$600/\text{iPhone})(200 \text{ iPhones})$
- c.  $CS = (1/2)(\$1200/\text{iPhone} - \$450/\text{iPhone})(250 \text{ iPhones} - 200 \text{ iPhones})$
- d.  $CS = (1/2)(\$450/\text{iPhone} - \$200/\text{iPhone})(250 \text{ iPhones})$

EXAM CONTINUES ON NEXT PAGE! THERE ARE 33 QUESTIONS!

24. Consider the following weights for the midterm, final and homework as stated in the Syllabus:

Midterm 1:	25%
Midterm 2:	25%
Final	40%
5 Homework Assignments:	10%

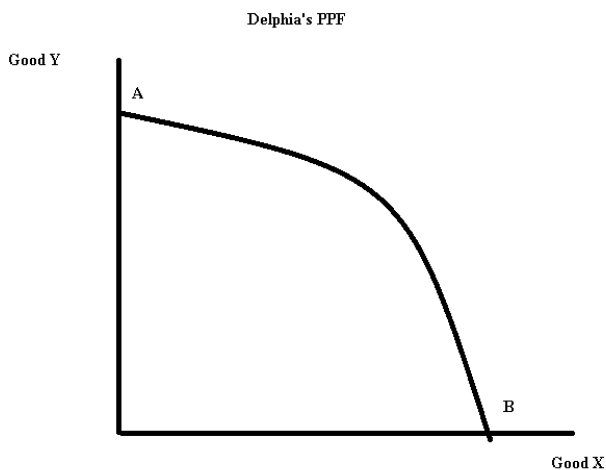
April receives the following grades on her assignments and exams:

Midterm 1:	60%
Midterm 2:	60%
Final	80%
5 Homework Assignments:	60%

What final percentage grade (her total weighted score) will April receive given the above weights and her scores?

- a. 64%
- b. 73%
- c. 68%
- d. 100%

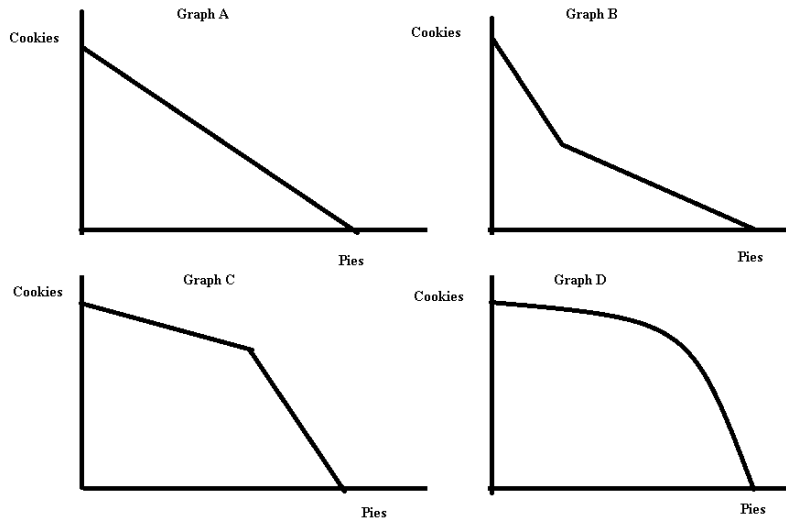
Use the graph below of Delphia's production possibility frontier to answer the **next** question.



25. As you move downward along Delphia's PPF from point A toward point B, the opportunity cost of producing one more unit of Good X:

- a. decreases.
- b. increases.
- c. stays constant.
- d. may increase, decrease, or remain constant.

26. Jon is currently not producing any cookies. When Jon produces his first dozen cookies he finds that he must decrease his pie production by 1 unit. When Jon produces his second dozen cookies he finds that he must decrease his pie production by 1.5 units. When Jon produces his third dozen cookies he finds that he must decrease his pie production by 3 units. Given this information and holding everything else constant, which of the following graphs is the best qualitative representation of Jon's production possibility frontier for cookies and pies?



- Graph A
- Graph B
- Graph C
- Graph D

27. Consider the excise tax described in class. For a given excise tax we can predict that consumer tax incidence will be greater than producer tax incidence when:
- Both the demand and the supply curves are more inelastic.
  - The demand curve is inelastic and the supply curve is elastic.
  - The demand curve is elastic and the supply curve is inelastic.
  - Both the demand and the supply curves are more inelastic.

EXAM CONTINUES ON NEXT PAGE! THERE ARE 33 QUESTIONS!

28. Consider the market for ramen to be initially in equilibrium. Ramen is an inferior good. How would an increase in income and a decrease in the number of sellers affect the equilibrium quantity of ramen and the equilibrium quantity of ramen relative to the initial equilibrium price and equilibrium quantity? Given this information and holding everything else constant,

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

29. Consider a market where the government has enacted an effective price ceiling. The market demand and supply curves can be described by the following equations where  $P$  is the price per unit and  $Q$  is the quantity of the good:

$$\text{Market Demand Curve: } Q = 200 - 2P$$

$$\text{Market Supply Curve: } Q = (1/3)P - 10$$

The price ceiling has been set at \$60 per unit.

Given this information and holding everything else constant, the value of consumer surplus with this price ceiling is:

- a. \$1600
- b. \$400
- c. \$175
- d. \$375

EXAM CONTINUES ON NEXT PAGE! THERE ARE 33 QUESTIONS!

30. Consider a market where the government has enacted an effective price floor. Given this information and holding everything else constant, how many of the following statements are true?

- In this market there will be a surplus of the good at this price floor price.
  - In this market the short side of the market will be the supply side.
  - In this market this policy will enhance consumer surplus.
  - In this market this policy will increase total surplus.
  - In this market the price the good sells for will be less than the equilibrium price in this market if there is no price floor.
- a. Four of these statements are true.
  - b. Three of these statements are true.
  - c. Two of these statements are true.
  - d. One of these statements is true.

EXAM CONTINUES ON NEXT PAGE! THERE ARE 33 QUESTIONS!

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

Bob and Sue are two individuals who produce brownies (B) and cookies (C). Bob can produce either 100 Cookies per day or 200 Brownies per day or any combination of brownies and cookies that lie on the straight line containing these two given points from his available resources and technology. Sue can produce either 300 Cookies per day or 300 Brownies per day or any combination of brownies and cookies that lie on the straight line containing these two given points from her available resources and technology. Use this information and the following information to answer this set of questions.

- (1) One kink point on the joint PPF can be represented in the form of (Brownies, Cookies). The coordinates for this kink point are (200, 300).
- (2) Assume that each segment of the joint PPF is linear.

31. Given the above information and holding everything else constant, which of the following points (Brownies, Cookies) is **not feasible** for Bob and Sue to produce?

- a. (Brownies, Cookies) = (150, 320)
- b. (Brownies, Cookies) = (325, 175)
- c. (Brownies, Cookies) = (410, 92)
- d. (Brownies, Cookies) = (24, 380)

32. Bob develops a new baking technique that allows him to increase the amount of Brownies he can bake per day by 100 Brownies if he only produces Brownies. This technique also allows him to increase his Cookie production by 150 Cookies per day if he only produces Cookies. Assume that Bob's PPF is still linear. Sue does not have access to this new baking technique. Given this information and holding everything else constant,

- a. Sue can absolutely produce more Cookies than Bob and Sue has the comparative advantage in the production of Brownies.
- b. Bob should specialize in the production of Brownies and Sue should specialize in the production of Cookies.
- c. If both individuals only produce Cookies then the maximum amount of Cookies that can be produced is 350 Cookies.
- d. This change in baking technique will not change the coordinates for the kink point on the joint PPF.

EXAM CONTINUES ON NEXT PAGE! THERE ARE 33 QUESTIONS!

33. Consider Bob and Sue's joint production possibility frontier prior to the change in baking technique described in the last question (go back to the original information). How many of the following statements are true given this PPF and holding everything else constant?

- If you consider the entire joint PPF, then the opportunity cost of producing a brownie gets bigger as you move down along the joint PPF.
  - The top segment of the joint PPF can be written as  $C = 400 - (1/2)B$ .
  - If (Brownies, Cookies) = (275, 225) is produced then Sue will produce 225 Cookies and 75 Brownies.
  - The first 150 Cookies that are produced should definitely be produced by Sue.
- a. 1 of these statements is true  
b. 2 of these statements are true  
c. 3 of these statements are true  
d. 4 of these statements are true

END OF EXAM!