

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 26 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 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.

Example: If you are registered for section 361 and it says "VERSION 2" at the top of this page, your "Special Codes" should read 3612.

- **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.**

Zaure Aitkulova (April)	Daniel Chaves	Wenbo Min
361 F 9:55 – 10:45 am Van Hise 391	363 F 12:05 – 12:55 pm Sterling 1339	362 Tr 4:35 – 5:25 pm Soc Sci 5322
366 F 11:00 – 11:50 am Van Hise 483	364 F 1:20 – 2:10 pm Soc Sci 6322	368 F 8:50 – 9:55 am Van Hise 205
	360 F 2:25 – 3:15 pm Ingraham 115	367 F 9:55 – 10:45 am Van Hise 574
		365 F 11:00 – 11:50 am Van Hise 487

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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 _____

1. 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%

Hiro receives the following grades on his assignments and exams:

Midterm 1:	50%
Midterm 2:	50%
Final	100%
5 Homework Assignments:	80%

What final percentage grade (his total weighted grade) will Hiro receive with the above weights and his grades?

- a. 70%
- b. 73%
- c. 75%
- d. 100%

2. A demand curve shifts to the left. One reason this could have happened is:

- a. Wealth increases and this is a normal good.
- b. There is a decrease in the price of a complementary good.
- c. There is a government policy implemented that subsidizes the consumption of this good.
- d. There is a change in tastes and preferences where this good is no longer considered attractive.

3. Erika would like to go on vacation for two days. If she goes on vacation, she will have to pay \$100 for a flight, \$100 for a hotel and \$50 for food. If Erika stays home she will spend \$50 for food over this time period. Furthermore, if she takes the trip 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 Erika's vacation?

- a. \$200
- b. \$250
- c. \$500
- d. \$550

4. Consider the market for cookies where Hiro and Wenbo are the only consumers of cookies. Hiro and Wenbo's demand curves for cookies are given by the following equations where P is the price per cookie and Q is the quantity of cookies:

Hiro's Demand Curve for Cookies: $Q = 5 - P$

Wenbo's Demand Curve for Cookies: $Q = 15 - 5P$

Suppose that Hiro and Wenbo consume a total of 8 cookies. Given this information and holding everything else constant, what is the market price for a cookie?

- a. \$1 per cookie
- b. \$2 per cookie
- c. \$3 per cookie
- d. \$4 per cookie

5. A market is initially in equilibrium. Suppose that at the same time people's incomes increase and the number of firms in the industry increase. Assume that the good in this market is a normal good. Given this information our economic model would predict that:

- a. The new equilibrium price in this market would be greater than the initial equilibrium price.
- b. The new equilibrium quantity in this market would be greater than the initial equilibrium quantity.
- c. The new value of consumer surplus in this market will be less than the initial value of consumer surplus.
- d. The new y-intercept of the demand curve will be smaller than the initial demand curve's y-intercept.

6. 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:

$$\text{Market Demand Curve: } Q = 280 - 2P$$

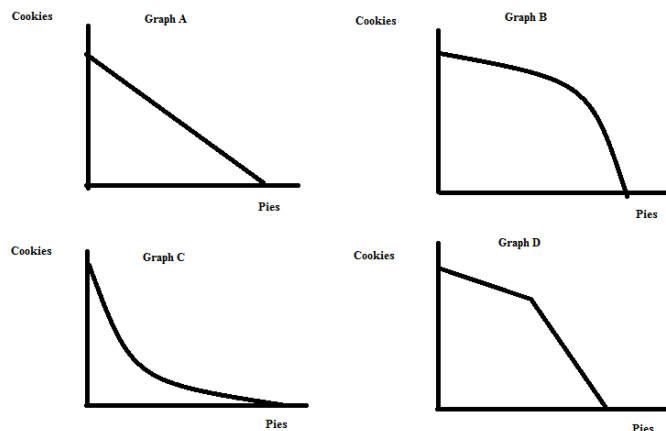
$$\text{Market Supply Curve: } Q = (1/3)P - (10)$$

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. \$750
- b. \$775
- c. \$900
- d. \$950

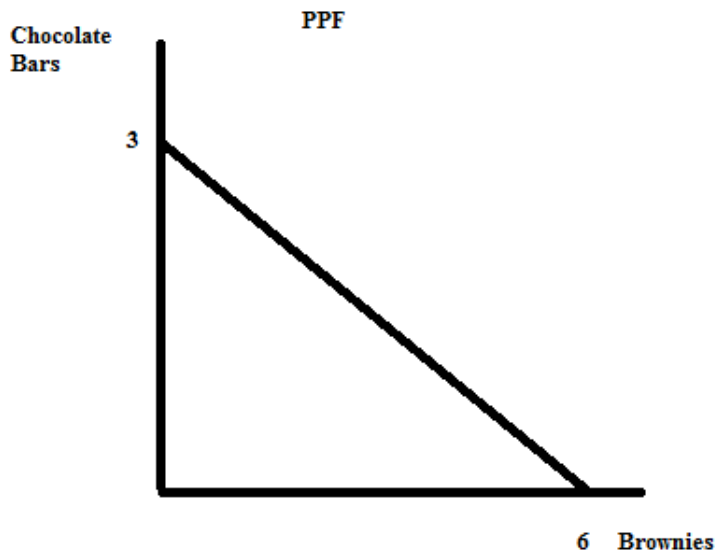
7. Steve is currently not producing any pies. When Steve produces his first pie he finds that he must decrease his cookie production by 2 units. When Steve produces his second pie he finds that he must decrease his cookie production by 3.5 units. When Steve produces his third pie he finds that he must decrease his cookie production by 7 units. Given this information and holding everything else constant, which of the following graphs is the best qualitative representation of Steve's production possibility frontier for cookies and pies?



- a. Graph A
- b. Graph B
- c. Graph C
- d. Graph D

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Consider the following PPF graph for the **next TWO (2)** questions. Chocolate bars are measured on the vertical axis and brownies are measured on the horizontal axis.



8. Given the above graph and holding everything else constant, which of the following points is efficient?

- a. 2 brownies and 2 chocolate bars
- b. 5 brownies and 2 chocolate bars
- c. 1 brownie and 2 chocolate bars
- d. 3 brownies and 2 chocolate bars

9. Given the above graph and holding everything else constant, which of the following points is **not feasible** (i.e., not possible for this economy to produce)?

- a. 2 brownies and 2 chocolate bars
- b. 5 brownies and 0.25 chocolate bars
- c. 1 brownie and 2 chocolate bars
- d. 3 brownies and 2 chocolate bars

10. 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?

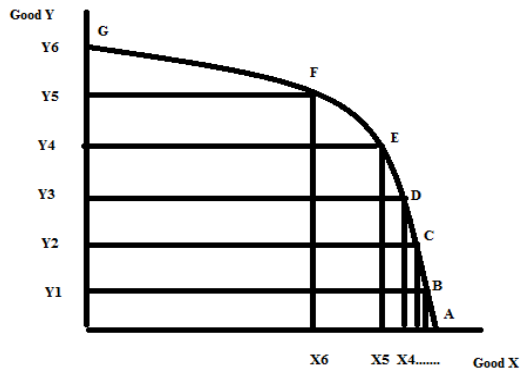
- In this market there will be a shortage of the good at this price floor price.
- In this market the short side of the market will be the demand side.
- In this market this policy will enhance producer surplus.
- In this market this policy will create a deadweight loss.
- In this market the price the good sells for will be greater 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.

11. Meg can make 60 dozen cookies in a day or 30 pies in a day or any combination of cookies and pies that lie on the straight line containing these two points. Rob can make 60 dozen cookies in a day or 80 pies in a day or any combination of cookies and pies that lie on the straight line containing these two points. Given this information and holding everything else constant, if Rob and Meg decide to trade with one another then:

- a. Meg is willing to pay 4 pies for 6 dozen cookies and Rob is willing to accept this offer.
- b. Rob is willing to sell 6 dozen cookies for 5 pies and Meg is willing to accept this offer.
- c. Rob is willing to pay 10 pies for 6 dozen cookies and Meg is willing to accept this offer.
- d. Meg is willing to sell 6 dozen cookies for 10 pies but Rob is not willing to accept this offer.

Use the graph of Serbak's production possibility frontier below to answer the **next** question:



12. As Serbak increases their production of good Y from point A toward point G, the opportunity cost of producing one more unit of the good Y:

- increases.
- decreases.
- stays constant.
- may increase, decrease, or remain constant.

13. Which of the following statements are true?

- A model is an accurate depiction of the real world.
 - Over time as researchers expand their knowledge models need to be revised and new models need to be created to explain this new data.
 - Models are judged on their predictive ability: do they accurately model the data we have and do they also accurately model the incoming new data.
 - Over time, it is rare that a model is discarded and no longer used.
- One statement is true.
 - Two statements are true.
 - Three statements are true.
 - Four statements are true.

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14. Which of the following will **NOT** shift the supply curve of phones to the right?

- a. a new technology is discovered which speeds up the production of phones
- b. an increase in the price of phones
- c. an increase in the number of sellers of phones
- d. a decrease in the expected future prices of phones

15. You are given the following information:

Price	Quantity Demanded	Quantity Supplied
\$1	20	13
\$2	16	17
\$3	12	21
\$4	8	25

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

- The equation for the supply curve in x-intercept form is: $Q = 4P + 9$.
 - The equilibrium price must be greater than \$2.
 - The equilibrium quantity must be greater than 18 units.
- a. One statement is true.
 - b. Two statements are true.
 - c. Three statements are true.
 - d. None of the statements are true.

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

Toyota and Kia, two car production companies, can produce Gas Cars and Electric Cars. Toyota can produce 50 Gas Cars, or 50 Electric Cars in one day or any combination of Gas Cars and Electric Cars that lie on the straight line containing these two points. Kia can produce either 60 Electric Car or 120 Gas Cars in one day or any combination of Gas Cars and Electric Cars that lie on the straight line containing these two points. 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 (Gas Cars, Electric Cars). The coordinates for this kink point are (120, 50).
- (2) Assume that each segment of the joint PPF is linear.

16. Given the above information and holding everything else constant, which of the following points (Gas Cars, Electric Cars) is **not feasible** for Toyota and Kia to produce?

- a. (Gas Cars, Electric Cars) = (40,85)
- b. (Gas Cars, Electric Cars) = (130,45)
- c. (Gas Cars, Electric Cars) = (150,15)
- d. (Gas Cars, Electric Cars) = (80,70)

17. Toyota invents a new technology that improves their ability to produce both Gas Cars and Electric Cars from the same set of resources. As a result of this new technology, Toyota can now produce either 80 Electric Cars in one day or 100 Gas Cars in one day or any combination of these two types of cars that lie on the straight line connecting to these two production possibilities. This new technology does not impact Kia's production possibilities. Given this information and holding everything else constant,

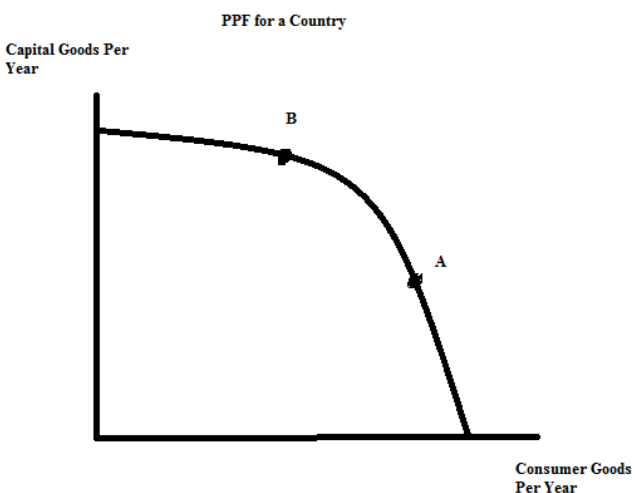
- a. Toyota can absolutely produce more Electric Cars than Kia and Kia has the comparative advantage in the production of Gas Cars.
- b. Toyota should specialize in the production of Gas Cars and Kia should specialize in the production of Electric Cars.
- c. If both companies only produce Electric Cars then the maximum amount of electric cars that can be produced is 130 Electric Cars.
- d. This technological change will not change the coordinates for the kink point on the joint PPF.

18. Assume that Toyota has access to the new technology described in the last question. Suppose now that Tesla enters the market as a third producer of cars. Tesla can produce either 100 Electric Cars or 1 Gas Car in one day. Given this information and holding everything else constant, how many of the following statements are true?

- The opportunity cost of producing a Gas Car for Toyota is greater than the opportunity cost of producing a Gas Car for Tesla.
 - Tesla has a comparative advantage in producing Electric Cars relative to Toyota and Kia.
 - If Toyota, Kia and Tesla all produce Electric Cars then the maximum number of Electric Cars that can be produced is 240 Electric Cars.
 - Kia can absolutely produce more Gas Cars than Toyota and Tesla combined can produce.
- 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.

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19. Consider an economy represented by the following production possibility frontier where capital goods per year are represented on the vertical axis and consumer goods per year are represented on the horizontal axis.



If economic growth is the goal for this country then:

- a. Producing at point A this year will grow this country faster than producing at point B since an increase in consumer good production this period will lead to even greater consumer good production in the next time period.
- b. Producing at point A this year will grow this country faster since the higher level of consumer goods will lead people to be happier and therefore more productive.
- c. Producing at point B this year will grow this country faster since the over production of consumer goods makes a country less driven and therefore slows the economic growth of the country.
- d. Producing at point B this year will grow this country faster since the production of more capital goods this period will enhance the productive resources available to this country in future time periods.

20. Consider the market for ramen to be initially in equilibrium. Ramen is an inferior good. How would a decrease in income and an increase in the number of sellers affect the equilibrium price 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.

21. Consider a market in which there are three individuals: Bill, Mark, and Alice. The individual demand curves for these three individuals are given by the equations below where P is the price of the good and Q is the quantity demanded of the good:

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

Mark's demand curve: $P = 5 - (1/2)Q$

Alice's demand curve: $P = 8 - 2Q$

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 $(Q, P) = (2, 8)$.
- If the price is between \$5 and \$8 then only Bill and Alice will have a demand for the good.
- If the price of the good in the market was \$2 per unit then the total quantity demanded at this price would be 17 units.

- a. One statement is true.
- b. Two statements are true.
- c. Three statements are true.
- d. Four statements are true.

22. Consider the market for hot chocolate to be initially in equilibrium. How would an increase in the price of cookies, a complement to hot chocolate affect the equilibrium price and quantity of hot chocolate? Given this information and holding everything else constant,

- a. the equilibrium price of hot chocolate will increase and the equilibrium quantity of hot chocolate will increase.
- b. the equilibrium price of hot chocolate will increase and the equilibrium quantity of hot chocolate will decrease.
- c. the equilibrium price of hot chocolate will decrease and the equilibrium quantity of hot chocolate will increase.
- d. the equilibrium price of hot chocolate will decrease and the equilibrium quantity of hot chocolate will decrease.

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EXAM CONTINUES: THERE ARE 33 QUESTIONS

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

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

$$\text{Market Demand Curve: } P = 1500 - 3Q$$

$$\text{Market Supply Curve: } P = Q + 300$$

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

- a. $(Q, P) = (900, 1200)$
- b. $(Q, P) = (30, 330)$
- c. $(Q, P) = (450, 750)$
- d. $(Q, P) = (300, 600)$

24. Suppose the demand curve for bicycles does not change. Cycletime, the manufacturer of bicycles, finds that its labor costs have risen and this impacts the supply curve. The new supply curve for bicycles is represented by the following equation:

$$\text{New Market Supply Curve: } Q = P - 400$$

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

- a. a decrease of 10 bicycles
- b. a decrease of 25 bicycles
- c. a decrease of 50 bicycles
- d. a decrease of 100 bicycles

25. Given the change in supply described in the last question, which of the following expressions correctly measures the new value of producer surplus, PS?

- a. $PS = (1/2)(\$1500/\text{unit} - \$675/\text{unit})(275 \text{ units})$
- b. $PS = (1/2)(\$675/\text{unit} - \$400/\text{unit})(275 \text{ units})$
- c. $PS = (1/2)(\$1500/\text{unit} - \$400/\text{unit})(275 \text{ units})$
- d. $PS = (1/2)(\$600/\text{unit} - \$400/\text{unit})(300 \text{ units})$

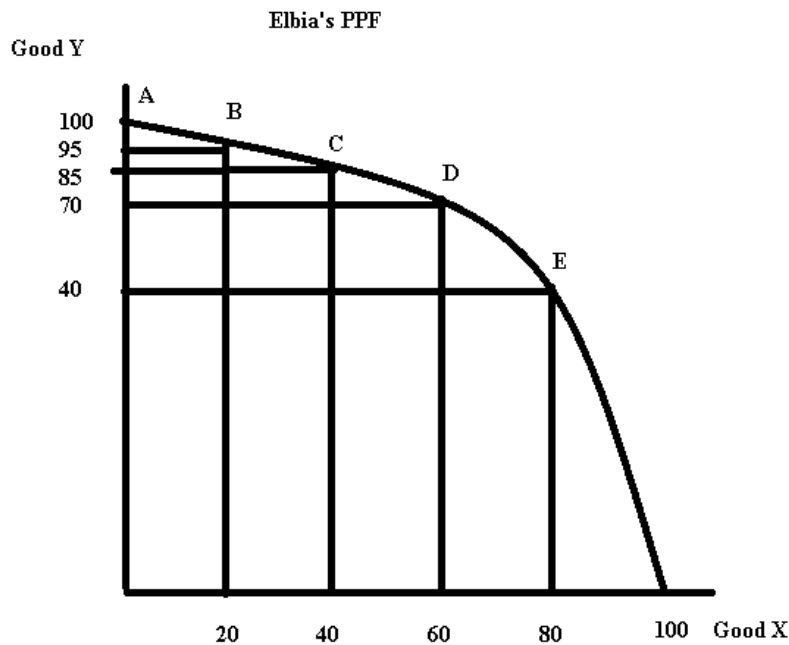
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EXAM CONTINUES: THERE ARE 33 QUESTIONS

26. Consider the excise tax described in class. For a given excise tax we can predict that consumer tax incidence will be less than producer tax incidence when:

- a. Both the demand and the supply curves are more inelastic.
- b. The demand curve is inelastic and the supply curve is elastic.
- c. The demand curve is elastic and the supply curve is inelastic.
- d. Both the demand and the supply curves are more elastic.

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



Suppose that Elbia is currently producing 43 units of Good X. If Elbia decides to produce one more unit of Good X then we can measure the opportunity cost of this additional production as approximately equal to:

- a. 0.75 units of Good Y.
- b. 12 units of Good Y.
- c. 1.33 units of Good X.
- d. 28 units of Good Y.

EXAM CONTINUES: THERE ARE 33 QUESTIONS

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EXAM CONTINUES: THERE ARE 33 QUESTIONS

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

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

$$\text{Market Demand for Pecans: } P = 1000 - (1/2)Q$$

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

28. Given this information, how many of the following statements are true?

- Suppose that the government does not intervene in this market in any way. In this market the quantity demanded will equal the quantity supplied.
- Intervention in this market with an effective price support program will increase total farm revenue.
- Suppose the farming year turns out to be a very good year for farming and therefore overall production of pecans increases at every price. Our economics model would predict that overall farm income would rise given this change in production.
- An effective price floor or government subsidy in this market would decrease 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.

29. Return to the initially provided information. The government decides to implement a price support program in this market. The government sets the price floor at \$300 per unit of pecans and agrees that it will purchase any surplus that occurs at this price floor price. How many of the following statements are true?

- Given this information and holding everything else constant, consumer expenditure on pecans with this price floor program will be \$420,000.
- Given this information and holding everything else constant, government expenditure on pecans with this price floor program will be \$12,000.
- If farmers have a very good year and the overall production of pecans increases at every price, then government expenditure on this price floor program will decrease.
- If farmers have a very good year and the overall production of pecans increases at every price, then consumers with this price floor program will consume a smaller quantity of pecans.

- a. One statement is true.
- b. Two statements are true.
- c. Three statements are true.
- d. Four statements are true.

30. Return to the initially provided information. 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 \$400 per unit of pecans that they sell. Given this program and holding everything else constant, the government will need to pay farmers a subsidy of _____ per unit of pecans sold when this price guarantee program is implemented.

- a. \$300
- b. \$450
- c. \$350
- d. \$400

EXAM CONTINUES: THERE ARE 33 QUESTIONS

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EXAM CONTINUES: THERE ARE 33 QUESTIONS

31. Consider a market where an effective price floor has been enacted. Which of the following statements is true given this price floor?

- a. Consumers of this good will benefit from the enactment of this price floor.
- b. Producers will capture part of the consumers' original consumer surplus with the enactment of this price floor.
- c. Since the enactment of this price floor results in producers losing a portion of their original producer surplus producers will oppose the enactment of the price floor.
- d. Relative to the initial equilibrium price, the enactment of this price floor will result in consumers paying a lower price for the good.

32. 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:

$$\text{Market Demand Curve: } P = 40 - (1/2)Q$$

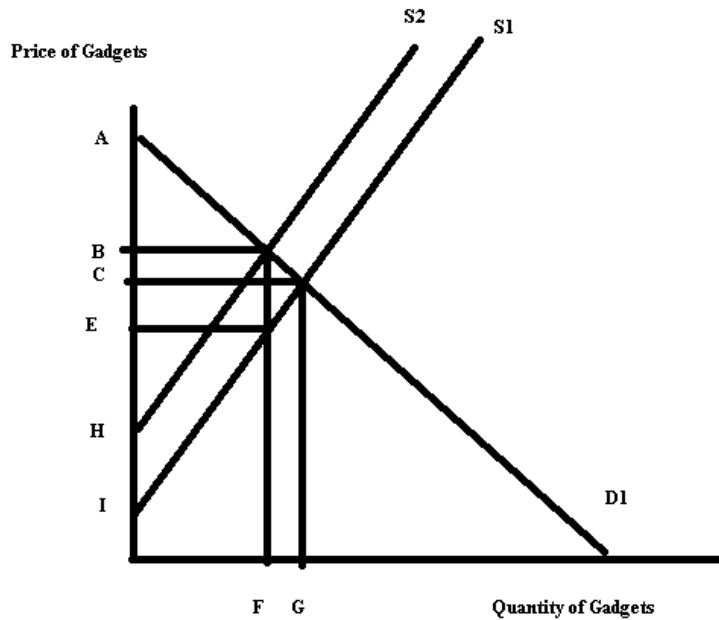
$$\text{Market Supply Curve: } P = 2 + (1/2)Q$$

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 28 widgets. Given this information and holding everything else constant, what is the amount of the excise tax per unit?

- a. \$6 per unit of the good
- b. \$8 per unit of the good
- c. \$10 per unit of the good
- d. \$12 per unit of the good

EXAM CONTINUES: THERE ARE 33 QUESTIONS

33. 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 producers than consumers if:

- Distance $(B - C)$ is greater than distance $(C - E)$.
- Distance $(A - C)$ is greater than distance $(C - I)$.
- Distance $(C - E)$ is greater than distance $(B - C)$.
- Distance $(C - E)$ is greater than distance $(H - I)$.