ENCS 101-1 Final Exam Fall 2013

Instructions: Answer each of the questions. Print your name and student id number clearly on the answer sheet. Fill in the bubbles corresponding to your student number, leaving the first two boxes blank and filling in the "0" bubble in the top rows. **NO CALCULATORS!!! USE PENCIL ONLY!**

**Good Luck!**

1. My version of the exam is:
    a. Version 1-Yellow
    b. Version 2-Purple
    c. Version 3-Green
    d. Version 4-Pink
    e. Version 5-White

2. If the demand for hot cocoa increases and the supply for hot cocoa decreases:
    a. the equilibrium price will increase and the equilibrium quantity will decrease.
    b. the equilibrium price will decrease and the equilibrium quantity will decrease.
    c. the equilibrium price will increase and the equilibrium quantity may increase or decrease.
    d. the equilibrium price may increase or decrease and the equilibrium quantity will decrease.

3. A decrease in the price of milk, a complement to fiber cereals, will result in:
    a. an increase in the demand for fiber cereal, increasing the equilibrium price of fiber cereal.
    b. an increase in the demand for fiber cereal, decreasing the equilibrium price of fiber cereal.
    c. a decrease in the demand for fiber cereal, increasing the equilibrium price of fiber cereal.
    d. a decrease in the demand for fiber cereal, decreasing the equilibrium price of fiber cereal.

4. Sheldon consumes pizza and Thai food. Pizza is an inferior good and Thai food is a normal good. This means, if Sheldon gets a new grant that doubles his income,
    a. his demand for pizza will increase.
    b. his demand for Thai food will increase.
    c. his demand for pizza will decrease.
    d. both b and c are true.

5. Berndatte observes that the price of beakers has increased. If beakers are provided in a perfectly competitive market, this increase in price could come from:

a. an increase in the demand for beakers.

b. an increase in the supply for beakers.

c. a decrease in the price of glass, an input to beakers.

d. a decrease in the number of scientists using beakers.

6. Raj orders a pizza for $15. He is trying to decide if he wants to consume one more piece to finish off the pie. If he is thinking like an economist, he will:

a. eat the last piece since he has already spent $15 on it.

b. continue to eat if the marginal cost of eating the last piece of pizza is less than the marginal benefit of eating the last piece of pizza.

c. continue to eat the last piece of pizza only if the total cost of finishing the pizza is less than the total benefit of finishing it.

d. never finish the pizza.

7. The quantity demanded of comic books has decreased. This could be explained by:

a. an increase in the price of comic books.

b. an increase in the price of science fiction films, a substitute for comic books.

c. a decrease in the price of action figures, a complement to comic books.

d. an increase in the supply of comic books.

8. The market for Star Wars DVDs is regulated and currently characterized by excess demand. The regulation is now lifted. This will result in:

a. an increase in price, a decrease in quantity demanded and an increase in quantity supplied.

b. an increase in price, an increase in quantity demanded, and a decrease in quantity supplied.

c. a decrease in price, a decrease in quantity demanded, and an increase in quantity supplied.

d. a decrease in price, an increase in quantity demanded, and a decrease in quantity supplied.

9. The price of plastic, an input required to produce action figures, has increased. This will:

a. increase the supply for pipes and decrease the equilibrium price of action figures.
b. increase the supply for pipes and increase the equilibrium price of action figures.
c. decrease the supply for pipes and increase the equilibrium price of action figures.
d. decrease the supply for pipes and decrease the equilibrium price of action figures.

10. Sheldon and Leonard are physicists, specializing in both theoretical and experimental physics. Their goal is to publish as many papers as possible. If Sheldon does no theoretical physics, he can write 20 experimental physics papers in one year. If he spends all of his time on theoretical physics, Sheldon can write 10 in one year. If Leonard spends no time on theoretical physics, he can write 25 experimental papers in one year. If he spends all of his time on theoretical physics papers, Leonard can write 1 theoretical physics paper per year. According to this information and the law of comparative advantages:

a. Sheldon should specialize in experimental physics and Leonard should specialize in theoretical physics.
b. Leonard should specialize in experimental physics and Sheldon should specialize in theoretical physics.
c. Leonard and Sheldon should each spend half of their time on each occupation.
d. Both Leonard and Sheldon should specialize in experimental physics.

11. Bernadette and Penny are waitresses at the Cheesecake Factory, where they split their duties between taking orders and bringing them to tables. Their production possibilities are defined in the following table.

| | **Production Per Hour** | |
|---|---|---|
| Bernadette | 10 orders | 20 Meals to table |
| Penny | 2 orders | 22 Meals to table |

If each person specializes according to her comparative advantage, _____ will take orders and ____ will bring meals to tables.

a. Bernadette; Penny
b. Penny; Bernadette
c. Bernadette; Bernadette
d. Penny; Penny

12. Bernadette and Penny are waitresses at the Cheesecake Factory, where they split their duties between taking orders and bringing them to tables. Their production possibilities are defined in the following table.

| | **Production Per Hour** | |
|---|---|---|
| Bernadette | 10 orders | 20 Meals to table |
| Penny | 2 orders | 22 Meals to table |

According to the table, ___ has absolute advantage in taking orders and _____ has absolute advantage in bringing the meals to tables.

a. Bernadette; Penny
b. Penny; Bernadette
c. Bernadette; Bernadette
d. Penny; Penny

13. Sheldon and Leonard are roommates, and they split the two main household chores: revising the roommate agreement and bring their guests hot beverages. Their goal is to finish the activities as quickly as possible. The table below shows the time it takes each individual to complete the activity, provided that he does not spend any time on the other activity.

| | **Revise the Roommate Agreement** | **Bring guest hot Beverages** |
|---|---|---|
| Sheldon | 10 minutes | 9 minutes |
| Leonard | 12 minutes | 8 minutes |

According to the table, ___ has comparative advantage in and should specialize in revising the roommate agreement and _____ has comparative advantage and should specialize in bringing guests hot beverages.

a. Sheldon; Leonard
b. Sheldon; Leonard
c. Sheldon; Sheldon
d. Leonard; Leonard

14. Raj splits his time between two activities: baking low fat desserts and playing video games. The following is his production possibilities frontier.

| Maximum Annual Output | Desserts Baked | Video Games Played |
|---|---|---|
| **A** | 50 | 0 |
| **B** | 40 | 20 |
| **C** | 30 | 40 |
| **D** | 20 | 50 |
| **E** | 10 | 55 |
| **F** | 0 | 57 |

Based on the PPF, Raj has ____ opportunity costs in desserts:

a. increasing
b. decreasing
c. constant
d. zero

15. Raj splits his time between two activities: baking low fat desserts and playing video games. The following is his production possibilities frontier.

| Maximum Annual Output | Desserts Baked | Video Games Played |
|---|---|---|
| **A** | 50 | 0 |
| **B** | 40 | 20 |
| **C** | 30 | 40 |
| **D** | 20 | 50 |
| **E** | 10 | 55 |
| **F** | 0 | 57 |

Based on the PPF, the production pair of 25 desserts and 55 video games is:

a. inefficient but attainable.
b. unattainable.
c. efficient and attainable.
d. a point on the PPF.

16. Sheldon makes the following two statements:
(1) “The Pasadena government passes a law increasing the tolls on freeways.”
(2) “This law change should not be implemented since it will hurt low income commuters.”

a. Statement 1 is normative and Statement 2 is positive.
b. Statement 1 is positive and Statement 2 is normative.
c. Both statements are positive.
d. Both statements are normative.

17. The price of super hero t-shirts is currently in equilibrium, and the price is set at $25/t-shirt. Now there is a price floor set at $22/t-shirts. This will result in:

a. A shortage in t-shirts.
b. A surplus of t-shirts.
c. No change in the equilibrium quantity.
d. A shift in the demand for t-shirts.

18. Howard is contemplating a career change. He currently works as an engineer and has a masters degree. He can obtain a Ph.D. from the Massachusetts Institute of Technology for $20,000 per year for three years. This would allow him to teach Engineering at CalTech. He should obtain the Ph.D. if:

a. the net present value of becoming an Engineering Professor is positive.
b. the total benefit of becoming an Engineering Professor is positive.
c. the opportunity cost of becoming an Engineering Professor is sufficiently low.
d. The $60,000 is a sunk cost, so he should become an Engineering Professor no matter what.

19. Leonard is getting paid from his most recent grant. He has a choice between $10,000 today, or $15,000 in one year. He will choose the $10,000 today if:

a. 10,000(1+r)> 15,000
b. 15,000(1+r)>10,000
c. 10,000/(1+r)>15,000
d. 10,000(r)>15,000

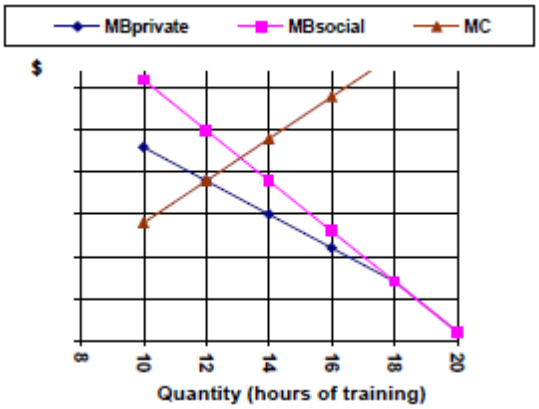
20. Penny is deciding what she would like her first job in L.A. to be. She has the following options:

| JOB | AVERAGE SALARY |
|---|---|
| **WAITRESS** | $20,000 |
| **ACTRESS** | $10,000 |
| **JEWLERY MAKER** | $15,000 |

Penny decides to take the job as a waitress. What is her opportunity cost? Assume that Penny only cares about money.

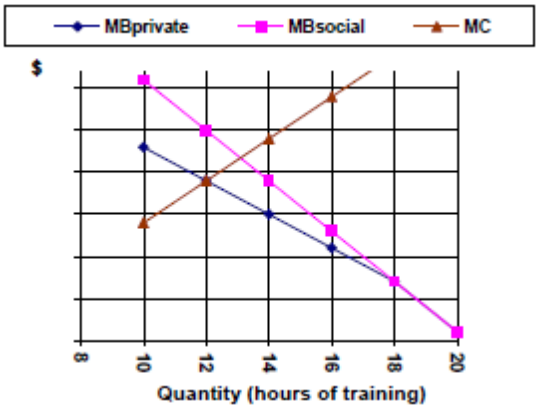
a. $10,000
b. $20,000
c. $15,000
d. $5,000

21. Lab workers have the option to attend safety training prior to working in a lab. The following depicts the Private Marginal Benefit, the Social Marginal Benefit, and the Marginal Cost associated with the training program. Without any intervention, lab workers will get how many hours of training?




a. 13
b. 12
c. 14
d. 0

22. Lab workers have the option to attend safety training prior to working in a lab. The following depicts the Private Marginal Benefit, the Social Marginal Benefit, and the Marginal Cost associated with the training program. Which of the following accurately characterizes the problem and solution displayed in the graph.




a. The socially optimal level of training is lower than the private optimal level of training; it should be taxed.
b. The socially optimal level of training is greater than the private optimal level of training; it should be taxed.
c. The socially optimal level of training is lower than the private optimal level of training; it should be subsidized.
d. The socially optimal level of training is greater than the private optimal level of training; it should be subsidized.

23. Sheldon's driving endangers the safety of all other drivers on the road—generating a negative externality to society. As is true with any negative externality:

a. the marginal social cost exceeds the marginal private cost.
b. the activity should be taxed or regulated in some way.
c. an individual's private decisions have spillover effects on the rest of society.
d. all of the above are correct.

24. There are 3 labs all owned by the same person polluting according to the table below. The owner of the labs comes to you for advice, as the government is requiring him to reduce emissions by a half. Assume that each lab can reduce its emissions to zero. You tell the owner how to reduce emissions in the most cost effective way. When doing this, you tell him the total cost is:

| | **Emissions: Tons/Day** | **Marginal Cost of Reduction (Per Ton)** |
|---|---|---|
| Biology Lab | 10 | $10 |
| Chemistry Lab | 20 | $20 |
| Physics Lab | 10 | $40 |

a. $100.
b. $300.
c. $500.
d. $400.

25. . There are 3 labs all owned by the same person polluting according to the table below. The owner of the labs comes to you for advice, as the government is requiring him to reduce emissions by a half. Assume that each lab can reduce its emissions to zero. He insists that it is better to reduce emissions of each lab by a half. When doing this, you tell him the total cost is:

| | **Emissions: Tons/Day** | **Marginal Cost of Reduction (Per Ton)** |
|---|---|---|
| Biology Lab | 10 | $10 |
| Chemistry Lab | 20 | $20 |
| Physics Lab | 10 | $40 |

a. $450.
b. $250.
c. $500.
d. $400.

26. The below table depicts the market for Methamphetamines (meth). The second column shows the private marginal cost, followed by the social marginal cost associated with each unit of consumption and production of the good. The final column depicts the marginal benefit, or the demand curve for meth. What is the per unit tax the government should institute in order to reduce consumption and production to the socially optimal level?

| Meth Use | Private Marginal Cost | Social Marginal Cost | Marginal Benefit |
|---|---|---|---|
| 0 | 1000 | 1500 | 5000 |
| 10 | 2000 | 3500 | 4000 |
| 20 | 3000 | 3500 | 3000 |
| 30 | 4000 | 4500 | 2000 |
| 40 | 5000 | 5500 | 1000 |
| 50 | 6000 | 6500 | 0 |

a. $50
b. $100
c. $500
d. No tax is needed, as the market is already producing at the socially optimal level.

27. Penny starts a jewelry company that makes "Penny Blossoms," sparkly hair barrettes. Penny maximizes the total revenue of Penny Blossoms by selling them at price of $10 each. Ceteris paribus, at a price of $15 each, you predict that:

a. the demand for Penny Blossoms is inelastic.
b. the demand for Penny Blossoms is elastic.
c. the demand for Penny Blossoms is unit elastic.
d. there is excess supply for Penny blossoms.

28. Howard notices that the price of do-dads, has decreased by 3%. At the same time, he notices that the quantity demanded increased by 4%. This means the elasticity of demand for do-dads is:

a. 3/4; inelastic.
b. 4/3; inelastic.
c. 3/4; elastic.
d. 4/3; elastic

29. Sheldon, Leonard, Howard, and Raj will purchase the same number of Comic-Con tickets regardless of changes in price. This means their demand for Comic-Con tickets is:

a. perfectly elastic.
b. unit elastic.
c. perfectly inelastic.
d. infinite.

30. Which of the following policies would not aid farmers in the U.S. agricultural market?

a. price supports
b. price floors
c. demand manipulations
d. taxing agriculture.

31. If the government imposes a price support program for cruciferous vegetable producers, this means:

a. the government sets a minimum price that can be charged for the good.
b. the government buys the surplus magic flowers, generated from the higher price.
c. the government sets a maximum price that can be charged for the good.
d. both a and b are required for price supports.

32. There are 6 consumers in the market for paintball gun rentals. The following table shows each of their reservation prices (or their willingness to pay). Suppose that the market price is $7. What is the consumer surplus at equilibrium?

| | |
|---|---|
| Raj | $15 |
| Howard | $12 |
| Sheldon | $13 |
| Leonard | $2 |
| Barry | $7 |
| Leslie | $6 |

a. $40
b. $19
c. $55
d. $21

33. Which of the following most accurately depicts what would happen if the U.S. Government legalizes recreational marijuana?

a. the price of marijuana would decrease if the shift in supply after legalization was smaller than the shift in demand.

b. the government would tax marijuana, bringing in more than the amount of any negative externality associated with consumption and production of marijuana.

c. demand for alcohol would decrease if the two goods are complements.

d. the government could alleviate some of the imperfect information issues by disclaiming all side effects of the drug.

34. The U.S. is debating whether or not to legalize all illegal drugs. They turn to Sheldon Cooper, who is an expert in everything, including economics, for his advice. He turns to the example of Portgual, where almost all illegal drugs were legalized in 2001. In this example, which of the following resulted from legalization?

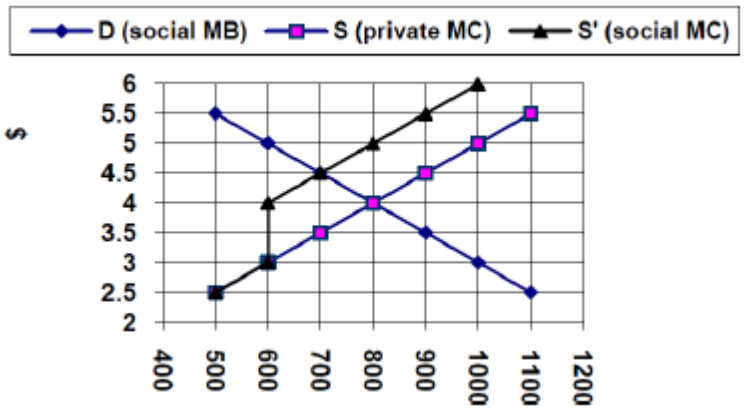
a. Treatment rates decreased.

b. Incidences of injection-caused HIV decreased.

c. The supply of drugs decreased.

d. Consumption decreased for the one drug that was not legalized.

35.




The above graph shows the market for methamphetamines (meth), an illegal substance, in Nebraska. The production process creates negative externalities as demonstrated in the graph. Therefore, S' displays the additional costs to society from consumption and production of meth. Based on the graph, the private equilibrium consumption level is _____ meth, and the socially efficient level is _____ meth.

a. 700; 800

b. 800; 700

c. 700; 700

d. 800; 800

36. There is a limited number of tickets to the Raiders of the Lost Arc edition with 21 additional seconds of never-before-seen footage. What is the most economically efficient way to allocate these tickets?

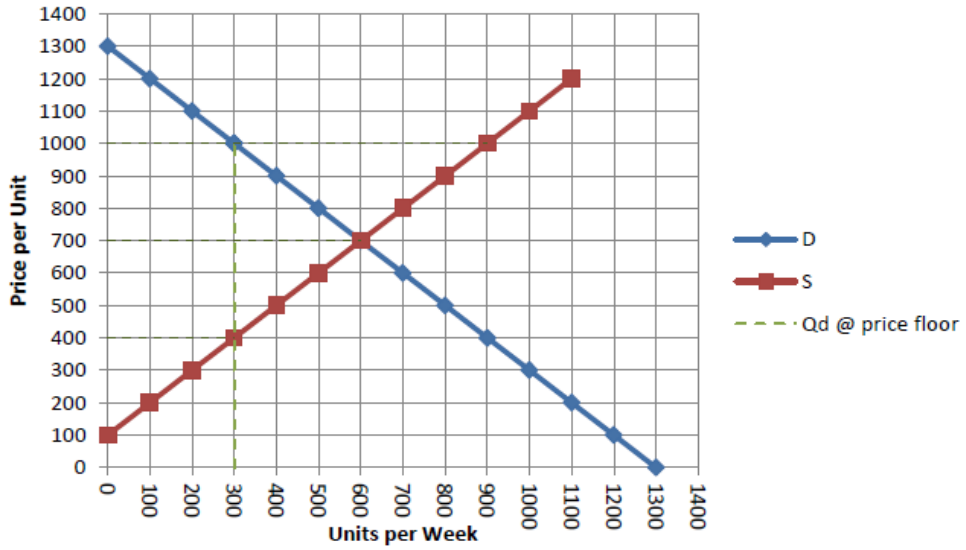
a. first come first serve
b. a lottery
c. an auction
d. giving the tickets to those who have never seen the film before

37. Amy is choosing monkeys for her latest scientific experiments. She has many to choose from, and is studying the effects of training on monkey IQs. The monkeys all want to join the study, but she decides to pick which ones to allow into the study based on a meritocracy. This means:

a. only those who have the lowest IQ would be chosen.
b. those with the highest IQs will be chosen for the study.
c. Amy will randomly select monkeys.
d. every monkey will be chosen.

38. What market failure could cause a substance to be labeled as illegal?

a. monopoly power.
b. taxation.
c. subsidies.
d. imperfect information.




39.

The market for toy trains is characterized by the graph above. The government has currently set a price floor at $1000/unit. Now, the government changes the policy to a price support. What is the producer surplus associated with the price support?

a. (1000-100)*(1/2)*900
b. (1300-1000)*(1/2)*300
c. (1000-400)*300 + (400-100)*300*(1/2)
d. (700-100)*(1/2)*600

40. Sheldon has his initial training as a physicist, but he considers starting a sweater-knitting company. You know the equilibrium wage for skilled knitters is $30/hour. You also know that the price per sweater knitted is $10/sweater. Based on their production function, shown below, how many workers should Sheldon hire? (HINT: you will need to calculate a Marginal Product of Labor and Value of Marginal Product of Labor Column to determine this.)

| **Quantity of Labor (workers per hour)** | **Quantity of Output (Sweaters/hour)** |
|---|---|
| **1** | 10 |
| **2** | 17 |
| **3** | 22 |
| **4** | 25 |
| **5** | 26 |

a. 1
b. 2
c. 4
d. 5

41. Sheldon has his initial training as a physicist, but he considers starting a sweater-knitting company. You know the equilibrium wage for skilled knitters is $30/hour. You also know that the price per sweater knitted is $10/sweater. Based on their production function, shown below, what is the **total revenue** Sheldon will earn when he hires 2 workers

| **Quantity of Labor (workers per hour)** | **Quantity of Output (Sweaters/hour)** |
|---|---|
| **1** | 10 |
| **2** | 17 |
| **3** | 22 |
| **4** | 25 |
| **5** | 26 |

a. $100
b. $170
c. $110
d. $510

42. Sheldon has his initial training as a physicist, but he considers starting a sweater-knitting company. You know the equilibrium wage for skilled knitters is $30/hour. You also know that the price per sweater knitted is $10/sweater. Based on their production function, shown below, what is the **value of the marginal product of labor** of the $5^{th}$ worker?

| **Quantity of Labor (workers per hour)** | **Quantity of Output (Sweaters/hour)** |
|---|---|
| **1** | 10 |
| **2** | 17 |
| **3** | 22 |
| **4** | 25 |
| **5** | 26 |

a. 26
b. $10
c. $30
d. 1

43. Sheldon has his initial training as a physicist, but he considers starting a sweater-knitting company. You know the equilibrium wage for skilled knitters is $30/hour. You also know that the price per sweater knitted is $10/sweater. Based on their production function, shown below, what is the **maximum profit** Sheldon can earn?

| **Quantity of Labor (workers per hour)** | **Quantity of Output (Sweaters /hour)** |
|---|---|
| **1** | 10 |
| **2** | 17 |
| **3** | 22 |
| **4** | 25 |
| **5** | 26 |

a. $250
b. $220
c. $110
d. $130

44. The equilibrium wage in the market for scientists is $30/hour. Now, the government imposes a minimum wage of $35/hour. This will:

a. increase the demand for scientists.
b. increase the supply of scientists.
c. create a shortage of scientists.
d. create a surplus of scientists.

45. Sheldon and Leonard are both physicists, but Leonard's salary is $35,000 per year, while Sheldon earns $150,000/year. The economics interpretation of the salary difference would be that:

a. Sheldon's value of marginal product of labor is higher, meaning that he brings more total revenue and is a more valuable employee.
b. Leonard is a more productive driver but has a cap on his wage.
c. There is a sunk cost associated with hiring Leonard, but not with hiring Sheldon.
d. The supply of physicists is perfectly elastic.

46. If there is an increase in the number of biologists in the labor market, this will:

a. increase the demand for biologists.
b. increase the supply of biologists.
c. increase neither the demand nor the supply for biologists.
d. both a and b are correct.

47. The following figure plots the Value of the Marginal Product of Labor on the Y axis and the number of workers hired per hour on the x-axis. If the market wage was $20/hour, how many workers would be hired per hour in equilibrium?

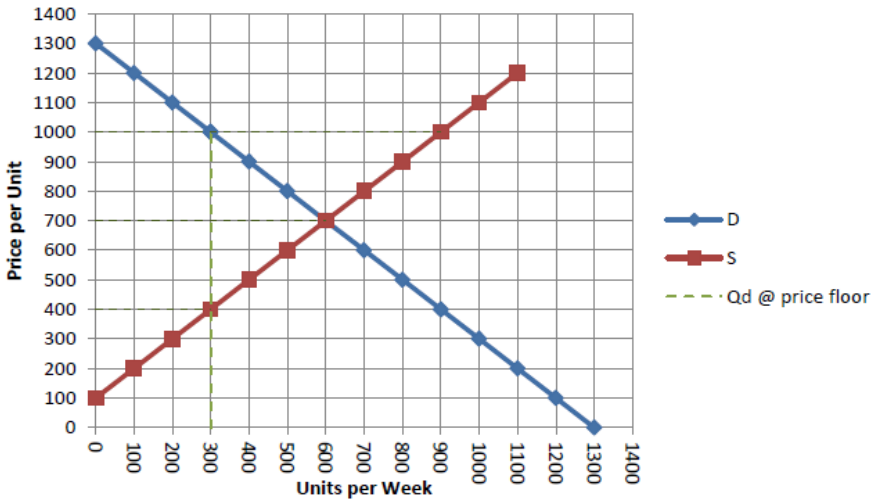

a. 2
b. 3
c. 4
d. 5

48. In the U.S., the top 20% of the income distribution have _____ of the country's total wealth, and the bottom 20% of the income distribution have _____ of the country's total wealth.

a. less than 30% ; less than 10%
b. more than 30%; more than 10%.
c. more than 30%; less than 10%.
d. less than 30%; more than 10%.

49. The market for comic books is depicted in the graph below. There is currently a price floor of $1000 per book (as these are vintage collectables). With the price floor, the consumer surplus in the market is:

a. (1/2)*(1300-1000)*300
b. (1/2)*(1300-700)*600
c. (1/2)*(1000-100)*900
d. (1000-400)*300+ (1/2)*(400-100)*300




50. At the current level of production, the marginal social cost of producing "bazingas" is $15, and the marginal private cost is $10. This means that:

a. the social optimum number of bazingas is lower than the private optimum number of bazingas.
b. there is a negative externality associated with production and consumption of bazingas.
c. bazingas are currently subsidized.
d. bazingas suffer from an imperfect information problem.

51. Assume Howard and Bernadette are a married couple currently make $25,000/year combined. If they have a child, this makes them _____ fall below the federal poverty line.

a. more likely to
b. less likely to
c. equally likely to
d. unlikely to ever

SOLUTIONS

| | |
|---|---|
| 1 | a |
| 2 | d |
| 3 | a |
| 4 | d |
| 5 | a |
| 6 | b |
| 7 | a |
| 8 | b |
| 9 | c |
| 10 | b or d |
| 11 | a |
| 12 | a |
| 13 | a or b |
| 14 | a |
| 15 | b |
| 16 | b |
| 17 | c |
| 18 | a |
| 19 | a |
| 20 | c |
| 21 | b |
| 22 | d |
| 23 | d |
| 24 | b |
| 25 | a |
| ~~26~~ | ~~c~~ |
| 27 | b |
| 28 | b |
| 29 | c |
| 30 | d |
| 31 | d |
| 32 | b |
| 33 | d |
| 34 | b |
| 35 | b |
| 36 | d |
| 37 | b |
| 38 | d |
| 39 | a |
| 40 | c |
| 41 | b |
| 42 | b |

43 d
44 d
45 a
46 b
47 c
48 c
49 a
50 b
51 a