Econ 251
Fall 2016
Final Exam Pink

1. Marcus just graduated from high school, and he's trying to figure out what to do with the next year. He can go to college, and in-state tuition for him is $10,000, or he could get a job working at a home improvement store for $20,000. He expects to spend $10,000 on living expenses (food and rent) whether he goes to college or gets a job. Based on this information, what is his opportunity cost of going to college?
    a. $10,000
    b. $20,000
    c. $30,000
    d. $20,000 plus the cost of room and board

2. Which of the following best describes the sunk cost in the previous problem?
    a. Living expenses
    b. The price of in-state tuition
    c. The price of out-of-state tuition
    d. The salary he could earn at the home improvement store

Erin and Fergus own an architectural firm. Erin can design 5 residential structures or 3 commercial structures per month, and Fergus can design 6 residential structures or 4 commercial structures per month. Use this information to answer the following 3 questions.

3. What is the slope of Erin's production possibility frontier if the number of commercial structures is measured on the x axis?
    a. -3/4
    b. -5/3
    c. -4/3
    d. -5/4

4. Erin has comparative advantage in designing _____ because her marginal cost of designing residential structures is _____ than her marginal cost of designing commercial structures.
    a. Residential structures; lower
    b. Residential structures; higher
    c. Commercial structures; lower
    d. Commercial structures; higher

5. If Erin and Fergus work together to design 8 residential structures this month, what's the maximum number of commercial structures they can design that month as well?
    a. 3 commercial structures
    b. 2 commercial structures
    c. 1 commercial structure
    d. Producing 8 residential structures would take up all of their time, so no one would have time to produce any additional commercial structures in a month.

6. On an economy-wide production possibility frontier, how does the slope generally change?
    a. The production possibility frontier tends to get flatter as more is produced because marginal costs tend to fall as more is produced.
    b. The production possibility frontier tends to get steeper as more is produced because marginal costs tend to rise as more is produced.
    c. The production possibility frontier tends to get steeper as more is produced because marginal costs tend to fall as more is produced.
    d. An economy-wide production possibility frontier is always linear so its slope doesn't change.

7. Which of the following would most likely expand an economy's production possibilities?
    a. A decrease in the level of education in the economy
    b. An increase in inflation in the economy
    c. An increase in the labor force
    d. An increase in unemployment

8. Supply of CamelBak water bottles has been increasing in the past 3 years. Which of the following best explains why supply of CamelBak water bottles might be increasing?
    a. Demand has been decreasing, and demand and supply always move in opposite directions.
    b. There has been an increase in the cost of producing CamelBak water bottles.
    c. There has been a decrease in the price of Nomader water bottles that are substitutes in consumption.
    d. There have been technological improvements in the production of CamelBak water bottles that allow more bottles to be produced with fewer resources.

9. An increase in supply is graphed as which of the following?
    a. A shift of the supply curve to the right
    b. A shift of the supply curve to the left
    c. A movement along the supply curve to the right
    d. A movement along the supply curve to the left

10. How does an increase in supply affect equilibrium in a market?
    a. Equilibrium price will rise, and equilibrium quantity will fall.
    b. Equilibrium price will rise, and equilibrium quantity will rise.
    c. Equilibrium price will fall, and equilibrium quantity will rise.
    d. Equilibrium price will fall, and equilibrium quantity will fall.

11. Candy canes and hot chocolate are complements in consumption, and hot chocolate and fudge are substitutes in production. If the price of candy canes rises at the same time that the price of fudge falls, how will equilibrium in the market for hot chocolate be affected?
    a. The price of hot chocolate will rise, but the quantity will be indeterminate.
    b. The price of hot chocolate will fall, but the quantity will be indeterminate.
    c. The price of hot chocolate will be indeterminate, but the quantity will fall.
    d. The price of hot chocolate will rise, and the quantity will also rise.

12. If candy canes and hot chocolate are complements in consumption, the cross-price elasticity between the two goods must be
    a. Positive
    b. Negative
    c. Zero
    d. Greater than 1

Demand and supply in the market for insulated cups are given by the following equations. Use this information to answer the following 4 questions.

$$Qd=1500 – 20P$$
$$Qs=30P - 300$$

13. What is the marginal cost producing the 300th insulated cups?
    a. $5
    b. $10
    c. $20
    d. $30

14. At what point is demand unit elastic in the market for insulated cups?
    a. (75, $1500)
    b. (1000, $25)
    c. (750, $37.50)
    d. (10, $1300)

15. At what point does the market for insulated cups reach equilibrium?
    a. (1000, $25)
    b. (780, $36)
    c. (750, $37.50)
    d. (210, $90)

16. What is total surplus in the market for insulated cups when the market reaches equilibrium?
    a. $33,150
    b. $22,500
    c. $24,625
    d. $25,350

17. When the price of wrapping paper increases from $5 to $8 a roll, the quantity demanded falls from 8 rolls per year to 5 rolls per year. The increase in the price of wrapping paper results in _____ in revenue, which implies that demand is _____.
    a. An increase; elastic
    b. An increase; inelastic
    c. A decrease; elastic
    d. No change; unit elastic

18. If demand for a good is perfectly inelastic, which of the following is true?
    a. Consumers will bear the burden of any tax imposed in the market.
    b. The price elasticity of demand is equal to 0.
    c. The demand curve is vertical.
    d. All of the above

19. In the absence of externalities, allocative efficiency is achieved in a market when
    a. Consumer surplus is maximized
    b. Total surplus is maximized
    c. Marginal benefit is maximized
    d. All of the above

20. Equilibrium in the market for pure maple syrup occurs at a price of 60 cents per ounce and a quantity of 200,000. Assuming demand and supply both have a price elasticity of 2.3, which of the following government regulations would result in a shortage of pure maple syrup?
    a. The government establishes a price ceiling of 80 cents per ounce of maple syrup.
    b. The government establishes a price floor of 80 cents per ounce of maple syrup.
    c. The government establishes a price ceiling of 50 cents per ounce of maple syrup.
    d. The government establishes a price floor of 50 cents per ounce of maple syrup.

21. Which of the following would you expect to increase the price elasticity of demand for maple syrup if the demand for maple syrup is linear and has a negative slope?
    a. An increase in the price of maple syrup
    b. An increase in consumer incomes so that it takes a smaller proportion of income to buy maple syrup
    c. A decrease in the number of substitutes for maple syrup.
    d. All of the above will increase the price elasticity for demand for maple syrup.

Buddy eats only maple syrup and sugar cookies. He has $5 of income that he spends only on these two goods. Each ounce of maple syrup he purchases costs 60 cents, and each sugar cookie he purchases costs $1. The marginal utilities he receives from maple syrup and sugar cookies are given in the table below. Use this information to answer the following 4 questions.

Quantity of maple syrup (in ounces)	Marginal utility	Quantity of sugar cookies	Marginal utility
1	80	1	80
2	70	2	70
3	60	3	60
4	50	4	50
5	40	5	40

22. Which of the following is true for Buddy at the combination of 5 ounces of maple syrup and 5 sugar cookies?
    a. Buddy is consuming a combination of maple syrup and sugar cookies that is on his budget line.
    b. Buddy would receive 600 units of total utility.
    c. Buddy is maximizing his utility given his limited budget.
    d. Buddy's marginal utility per dollar spent on the 5th ounce of maple syrup is equal to the marginal utility per dollar spent on the 5th sugar cookie.

23. What combination of maple syrup and sugar cookies maximizes Buddy's utility given his limited budget?
    a. 5 sugar cookies and 0 ounces of maple syrup
    b. 4 sugar cookies and 5 ounces of maple syrup
    c. 2 sugar cookies and 5 ounces of maple syrup
    d. 1 sugar cookie and 5 ounces of maple syrup

24. When a consumer's indifference curve is tangent to the consumer's budget line, which of the following occurs?
    a. The marginal rate of substitution is equal to the relative price.
    b. The consumer is maximizing utility given a limited budget.
    c. The marginal utility per dollar spent is equal across all goods.
    d. All of the above.

25. If candy canes are inferior goods, how will the substitution and income effects of a decrease in the price of candy canes affect the quantity purchased?
    a. The substitution effect of the decrease in price will increase the quantity of candy canes purchased, while the income effect of the decrease in price will decrease the quantity of candy canes purchased.
    b. The substitution effect of the decrease in price will decrease the quantity of candy canes purchased, while the income effect of the decrease in price will decrease the quantity of candy canes purchased.
    c. The substitution effect of the decrease in price will increase the quantity of candy canes purchased, while the income effect of the decrease in price will increase the quantity of candy canes purchased.
    d. The substitution effect of the decrease in price will decrease the quantity of candy canes purchased, while the income effect of the decrease in price will increase the quantity of candy canes purchased.

26. If economic profit is equal to zero for a firm, which of the following must also be true?
    a. Fixed costs are zero
    b. Price is equal to average total cost
    c. Price is equal to marginal revenue
    d. Average variable cost is equal to marginal cost

27. In the short run, a firm always maximizes profit where
    a. MC=AVC
    b. ATC=Price
    c. Revenue is maximized
    d. MR=MC

The table below provides cost data for a firm that produces fruitcake in a perfectly competitive market. Use this information to answer the following 5 questions.

Quantity of fruitcake	FC	VC	MC
10		40	
20			3
30			8
40		280	
50	100		18

28. What is the average fixed cost of producing 20 fruitcakes?
    a. $100
    b. $5
    c. $4
    d. $1

29. What is the marginal cost of producing the 35th fruitcake?
    a. $10
    b. $12
    c. $13
    d. $15

30. If the equilibrium price in the market for fruitcake is $15, what is the firm's marginal revenue?
    a. $15
    b. $10
    c. $7.50
    d. $5

31. If the equilibrium price in the market for fruitcake is $15, what level of fruitcake production will maximize profit?
    a. 0
    b. 30
    c. 40
    d. 50

32. What is the firm's shutdown point?
    a. $2.33
    b. $3.50
    c. $4
    d. $5

33. In the long run, a perfectly competitive firm earns economic profit that is
    a. Always positive
    b. Always negative
    c. Equal to its accounting profit
    d. Equal to zero

Demand and marginal cost facing a monopolist are given by the equations below. Use these to answer the following 3 questions.

D: $Q_d = -(1/2)P + 500$
MC: $MC = 200$

34. What equation defines the monopolist's marginal revenue?
    a. MR=300
    b. MR=-P+500
    c. MR=1000-2Q
    d. MR=1000-4Q

35. What level of output and what price maximize profit for the monopolist?
    a. Q*=200 and P*=600
    b. Q*=200 and P*=200
    c. Q*=400 and P*=300
    d. Q*=400 and P*=200

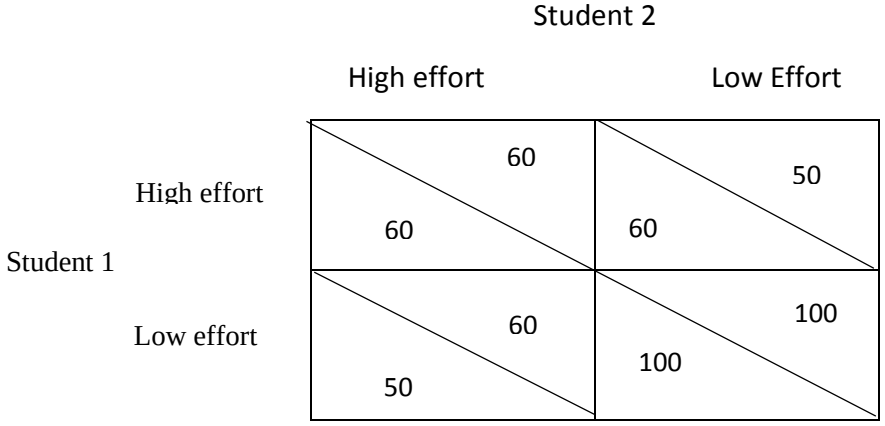
36. What deadweight loss results from this monopoly?
    a. $50,000
    b. $40,000
    c. $20,000
    d. $10,000

37. A monopolist is currently producing 10,000 units of output at a price of $50 per unit. At that level of output, marginal cost is equal to $50 and profit is equal to $1,000. What should this firm do, if anything, to maximize profit?
    a. Increase output
    b. Decrease output (but not shut down)
    c. Shut down
    d. Decrease price

38. A firm in a monopolistically competitive market is currently producing 10,000 units of output at a price of $50 per unit. At that level of output, marginal cost is equal to $50 and profit is equal to $1,000. What should this firm do, if anything, to maximize profit?
    a. Increase output
    b. Decrease output (but not shut down)
    c. Shut down
    d. Decrease price

39. What's the difference between a monopoly and a monopolistically competitive industry?
    a. There are more firms in a monopolistically competitive industry than in a monopoly.
    b. Firms in a monopolistically competitive industry earn zero economic profit in the long run, while a monopoly can earn positive economic profit in the long run.
    c. The demand curves facing firms in a monopolistically competitive industry is more elastic than the market demand curve facing a firm in a monopoly.
    d. All of the above

Use the following scenario to answer the next 2 questions. Two students are in a game theory class and choose what effort to exert in the course. They can each choose to exert either low or high effort in the class. High effort is more costly than low effort, but an "A" grade is preferred to a "B" grade. Because the course grade is curved, they both receive A's if they exert the same amount of effort (either high or low effort). However, if one student exerts high and the other low effort, the high-effort individual gets an A and the low-effort individual gets a B. The payoffs associated with this game are illustrated below.



40. What are the dominant strategies of this game?
    a. Student 1 exerts high effort, and Student 2 exerts high effort.
    b. Student 1 exerts low effort, and Student 2 exerts low effort.
    c. Student 1 exerts high effort, and Student 2 exerts low effort.
    d. There are no dominant strategies of this game.

41. What is (are) the Nash equilibrium(a) of this game?
    a. There are two Nash equilibria: one where both students exert high effort and one where both students exert low effort.
    b. There are two Nash equilibria: one where Student 1 exerts high effort and Student 2 exerts low effort, and another one where Student 2 exerts high effort and Student 1 exerts low effort.
    c. The only Nash equilibrium is where both students exert low effort.
    d. There is no combination of strategies that would result in a Nash equilibrium of this game.

42. In the market for vaccinations, a positive consumption externality exists. This implies which of the following?
    a. There is an external cost associated with vaccinations.
    b. The marginal social benefit of vaccinations is greater than the marginal private benefit of vaccinations.
    c. The market equilibrium number of vaccinations is higher than the number of vaccinations that would satisfy allocative efficiency.
    d. All of the above

Power plants that rely on coal increase the amount of sulfur dioxide that dissolves into the air, eventually increasing the acidity of precipitation. The higher acidity of rain and snow can damage forests by making it more difficult for plants to absorb minerals from the soil. The equations below provide information about the market demand and supply of electricity. There is a constant marginal external cost of $25 per unit of electricity. Use this information to answer the following 4 questions.

D: $Qd = 200 - 2P$
S: $Qs = P - 10$

43. What type of externality is this problem addressing?
    a. Negative production externality
    b. Negative consumption externality
    c. Positive consumption externality
    d. Positive production externality

44. At the market equilibrium quantity, the marginal private cost of electricity is _____ while the marginal social cost of electricity is ____.
    a. $50; $75
    b. $40; $90
    c. $60; $10
    d. $70; $95

45. What quantity of electricity satisfies allocative efficiency in this market?
    a. 60
    b. 70
    c. 50
    d. 43.3

46. Which of the following potential solutions would move the market to allocative efficiency?
    a. Impose a tax of $25 per unit on the producers of electricity
    b. Offer a $25 per unit subsidy to consumers to compensate them for the cost of having fewer healthy trees
    c. Set the maximum legal quantity of sulfur dioxide that can be emitted to zero
    d. All of the above would result in allocative efficiency

47. To find the level of a public good that satisfies allocative efficiency, you
    a. Find the level of output where the sum of the individual marginal private benefits is equal to the marginal social cost
    b. Find the level of output where the marginal private benefit for a single consumer is equal to the marginal private cost for that consumer
    c. At a given price, add the quantities demanded across consumers.
    d. Find the level of output that maximizes revenue in the economy.

48. A public good has what two characteristics?
    a. Nonrival and nonexcludable
    b. Rival and excludable
    c. Nonrival and excludable
    d. Rival and nonexcludable

Person	Income ($)
Walter	180,000
Buddy	20,000
Emily	80,000
Jovie	35,000
Michael	15,000
Miles	8,000
Eugene	44,000
Deb	50,000
Morris	72,000
Fulton	33,000

49. Based on the distribution of income in the 10-person economy above, what percentage of income does the richest 20 percent of the population control?
    a. 37.2%
    b. 42.6%
    c. 48.4%
    d. 51.6%

50. Based on the same distribution of income above, which of the following points would be on the Lorenz curve for this economy?
    a. (20, 4.3)
    b. (40, 9.9)
    c. (60, 51.6)
    d. (100, 48.4)