

ECO 211  
Spring 2019  
Midterm Exam 1  
3/7/2019

Name (Print): \_\_\_\_\_

Time Limit: 75 Minutes

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This exam contains 8 short answer questions, 1 longer answer question, and 2 long answer questions. You must complete all short answer and longer answer questions; however, you only need to complete 1 of the long answer questions. Check to see if any pages are missing.

You may *not* use your books or notes on this exam. Calculators are permitted.

You are required to show your work on each problem on this exam. The following rules apply:

- **Organize your work**, in a reasonably neat and coherent way, in the space provided. Work scattered all over the page without a clear ordering will receive very little credit.
- **Show your work**. A correct answer, unsupported by calculations, explanation, or algebraic work will receive no credit; an incorrect answer supported by substantially correct calculations and explanations might still receive partial credit.
- If you need more space, use the back of the pages; clearly indicate when you have done this.

**Multiple Choice:** Circle the correct answer.

1. (5 points) In the equation  $Y = 13X + 10$  where Y is a function of X
  - A. Y is the dependent variable.
  - B. X is the dependent variable.
  - C. 13 is a variable.
  - D. The slope is -13.
  
2. (5 points) Cross price elasticity of demand is used to
  - A. determine if two goods are substitutes.
  - B. determine if a good is inferior, normal, or a luxury.
  - C. used to tell how the quantity demanded changes as that good's price changes.
  - D. none of the above.

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3. (5 points) You roll a die that has six sides. On 2 sides, there are no dots. On 2 sides, there are 2 dots each. That last two sides each have one dot. What is the expected value of the roll.
- A. 0.5
  - B. 0.75
  - C. 1
  - D. 1.5
4. (5 points) Suppose a lottery ticket costs \$1 and the probability that a holder will win nothing is 99%. What must the jackpot be for this to be a fair bet?
- A. 99
  - B. 100
  - C. 999
  - D. 1,000
5. (5 points) Which of the following is true about Nash Equilibria?
- A. It is always the highest payoff for all players.
  - B. All games have only one.
  - C. All games have at least one.
  - D. If there is at least one in pure strategies, there can be none in mixed strategy.
6. (5 points) A game must have
- A. more than one player.
  - B. payoffs that relate to players' actions.
  - C. all of the above.
  - D. none of the above.
7. (5 points) With only two goods, if the income effect is in the same direction as the substitution effect then the good is
- A. normal.
  - B. inferior.
  - C. giffen.
  - D. There is not enough information.
8. (5 points) Indifference curves
- A. represents the various quantities that a consumer is willing to purchase of a good at various prices.
  - B. will shift if preferences, prices of other goods, or income change.
  - C. are always U shaped.
  - D. never cross each other.

**Longer Answer Question:** Please answer the following. Be sure to label any graphs.

1. (30 points) Zachary has a utility function of  $U(x, y) = 2x + 4y$ . He has an income of \$10. Also, the price of x is \$2 and the price of y is \$1.

(a) (15 points) Draw the budget curve with x on the x-axis and y on the y-axis. Make sure to label your intercepts.

(b) (15 points) How much of x does Zachary want to consume? How much of y?

**Long Answer Questions:** Please answer the following. Show all work. Draw graphs where needed. Only answer 1 of the 2 questions.

1. (30 points) Use the graph to answer the question.

		FEDERAL RESERVE	
		Low interest rates	High interest rates
CONGRESS	Budget balance	3, 4	1, 3
	Budget deficit	4, 1	2, 2

- (a) (10 points) Find the pure strategy nash equilibrium or equilibria.
- (b) (10 points) Does either player have a dominant strategy? If so, name the dominant strategy for each player.
- (c) (10 points) Draw this game tree in extensive form.

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2. (30 points) Let  $U(\text{cars}, \text{computers}) = \text{cars}^{\frac{1}{2}} + \text{computers}^{\frac{1}{2}}$  for a consumer.
- (a) (15 points) Find the consumer demand for cars in terms of prices and income.
- (b) (15 points) Are cars and computers substitutes or complements? Explain your answer.

Extra Credit: Doodle a 3D object.