Economics 101	Name _____
Fall 2011	TA Name _____
11/22/11	Discussion Section #_____
First Midterm	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. The exam consists of **33 multiple choice questions**. Each question is worth 3 points. You will receive an additional 1 point for filling in the scantron sheet and exam booklet completely and accurately for a total of 100 points.

- **Answer all questions on the scantron sheet with <u>a #2 pencil</u>**
- **Pick the <u>best answer</u> for each question. 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.**

<u>NO CELL PHONES, CALCUATORS, OR FORMULA SHEETS ARE ALLOWED</u>

How to fill in the scantron sheet:
1. Print your <u>last name, first name,</u> and <u>middle initial</u> in the spaces marked "Last Name," "First Name," and "MI." Fill in the corresponding bubbles below.
2. Print your <u>student ID number</u> in the space marked "Identification Number." Fill in the bubbles.
3. Write <u>the number of the discussion section you've been attending</u> under "Special Codes" spaces ABC, and fill in the bubbles. You can find the discussion numbers below on this page.
4. Write the <u>version number</u> of your exam booklet under "Special Codes" space D, and fill in the bubble. The version number is on the top of this page.

<u>Discussion sections are as follows:</u>

Patricia Abbott	**Irina Merkurieva**	**Nelson Ramirez Rondan**
Dis 332 Fr 08:50	Dis 330 Th 03:30	Dis 336 Fr 11:00
Dis 335 Fr 01:20	Dis 333 Th 04:35	Dis 339 Fr 12:05
Dis 337 Fr 02:25		Dis 342 Fr 09:55
Dis 338 Fr 12:05		Dis 346 Fr 08:50

Kegon Tan	**Ryan Veiga**
Dis 334 Fr 01:20	Dis 331 Th 03:30
Dis 340 Fr 02:25	Dis 343 Fr 11:00
Dis 341 Fr 04:35	Dis 345 Fr 09:55
	Dis 347 Fr 08:50

Work Sheet

I, _____, agree to neither give nor receive any help on this exam from other students. Furthermore, I understand that use of a calculator is an academic misconduct violation on this exam.

Signed _____

QUESTIONS

1. A firm has increased all inputs used in the production of its product by 50%. As a result, the firm's output has doubled. From this information we can conclude that the firm's production function exhibits:

    a. Increasing returns to scale.
    b. Decreasing returns to scale.
    c. Decreasing marginal returns.
    d. Increasing marginal returns.

2. If Peter's marginal rate of substitution of x for y is given by $MRS_{xy} = 5$ at his optimum consumption bundle, and if the price of x is $2, then what is the price of y?

    a. $0.40
    b. $2.50
    c. $5.00
    d. $10.00
    e. $12.40

3. The farmers in a small rural town face a perfectly elastic demand curve. In equilibrium, 10 units are sold. After the government imposes a $2 tax, the producer tax incidence is $12. Given this information, what must the slope of the supply curve be?

    a. 1/12
    b. 1/10
    c. 5/6
    d. 1/5
    e. 1/2

4. Derek's indifference curves for good x and good y are bowed toward the origin. Which of the following statements might have been said by Derek in regard to goods x and y?

    a. "I don't care how much y I have when I make decisions about how much x to buy."
    b. "Good x and y don't mix very well. I'd rather just have more of one or the other."
    c. "I like x every bit as much as I like y. I'm happy either way!"
    d. "The more y I have, the less I like x."
   e. "It's boring to have too much of one or the other. I like variety."

Use the following information to answer the next **TWO (2) questions.**

Deirdre's Soap Company has a total cost curve for producing Q bars of soap given by the equation $TC=2+Q+(1/2)Q^2$. Her marginal cost is given by $MC=1+Q$.

5. If Deirdre is producing 4 bars of soap, what is her total VARIABLE cost?

    a. $5
    b. $20
    c. $14
    d. $4
    e. $12

6. Given the initial information, if the market price is $4 per bar of soap, what will be Deirdre's profit?

    a. $2.50
    b. $12.00
    c. $9.50
    d. $4.50
    e. $9.00

Next→

7. Researchers worry that the consumer price index may not measure inflation accurately. Which of the following situations will <u>NOT</u> lead to inaccuracy in the calculation of the consumer price index?

    a. Marshall's (a clothing store) frequently discounts items in the store.
    b. The internet has made it much easier to research prices and to purchase goods quickly.
    c. Many goods today are made with higher quality, compared to their counterparts 20 years ago.
    d. Computers have become immensely popular in the past 30 years.

8. Bob's indifference curves between good x and good y are shown below where U is the symbol for the level of utility Bob gets from a particular indifference curve. Suppose Bob's budget is $40, and both good x and good y cost $8. Given this information and the graph below, what will be Bob's highest attainable utility? (**Hint:** you will need to carefully draw something on the graph. Choose the answer that seems most reasonable given what you drew.)

    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
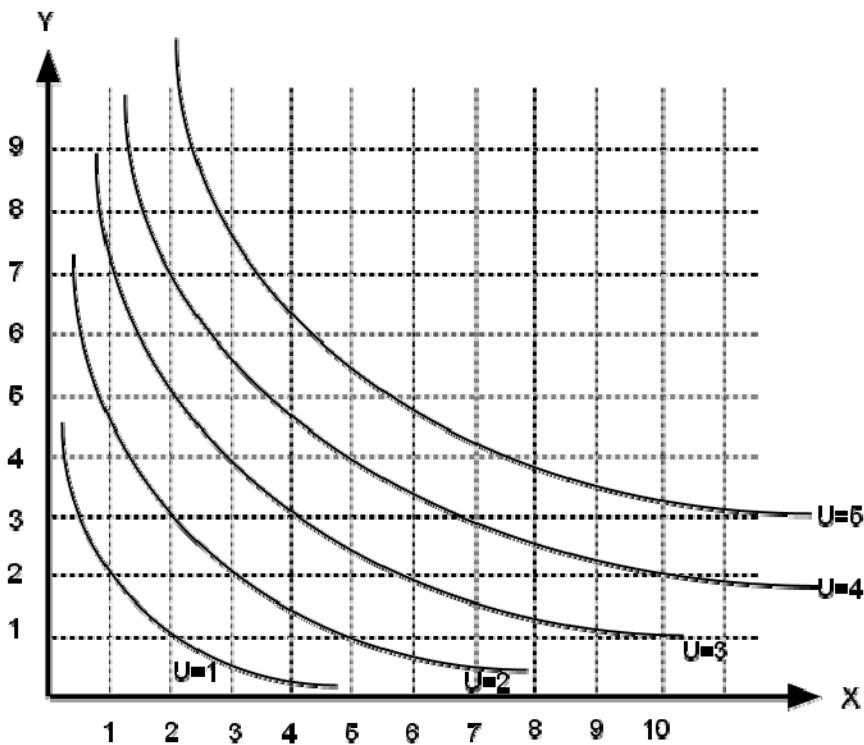
9. Consider the effect of an excise tax on the following markets. In which market would you expect the consumer tax incidence to be relatively low?

   a. The market for cigarettes: consumers are addicted to cigarettes and have a hard time cutting back or quitting.
   b. The market for rented apartments in a small, poor town: people are too poor to buy or build new housing, and they can't afford to commute from another community that might have cheaper rental units.
   c. The market for beef: most people like chicken and fish, too.
   d. The market for insulin-dependent diabetics: diabetics need insulin!

Use the following information to answer the next **TWO (2) questions**.

Ruth needs new clothes. At the original price of $10 for a shirt, Ruth will buy 4 shirts. Unfortunately for Ruth , the price of shirts has risen to an extreme $20 for a shirt! At such steep prices, she is only willing to buy 2 shirts. For this set of questions assume that Ruth's demand curve is linear.

10. Using the midpoint (arc elasticity) formula and the above information, what is Ruth's price elasticity of demand?

   a. 1/2
   b. 1
   c. 2
   d. 3/2

11. Using the point elasticity formula, which of the following is Ruth's price elasticity of demand at a price of $10 per shirt?

   a. 1/2
   b. 1
   c. 2
   d. 3/2

Use the following graph to answer the next **TWO (2) questions.**
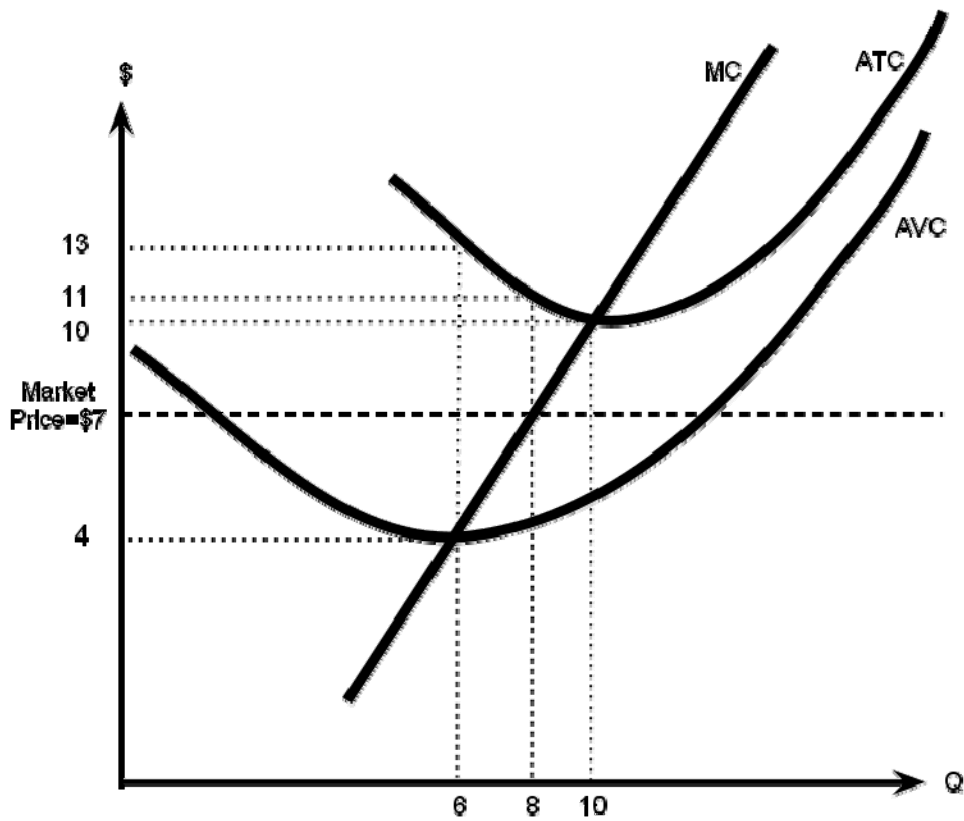
12. What are the firm's total costs at the current market price?

    a. $56
    b. $78
    c. $24
    d. $100
    e. $88

13. What is the firm's economic profit at the current level of production? (Hint: the current level of production is determined by the market price.)

    a. -$32
    b. -$30
    c. $18
    d. $30
    e. $56

14. Ludwig consumes goods x and y, on the x and y axes respectively. His marginal utility for x is given by $MU_x=1/(2x)$ and his marginal utility of good y is given by $MU_y=1/y$. Consider the indifference curve going through the point x=20, y=10. What must be the absolute value of the slope of the indifference curve going through this point?

    a. 4
    b. ¼
    c. 2
    d. ½
    e. 3

15. Which of the following graphs might represent the utility function of an individual with decreasing marginal utility? In the graphs U stands for total utility and Q stands for the quantity of the good.
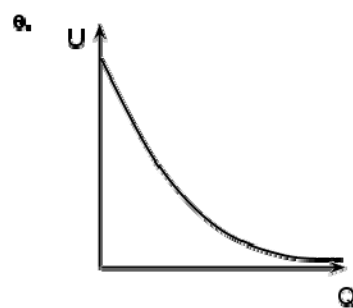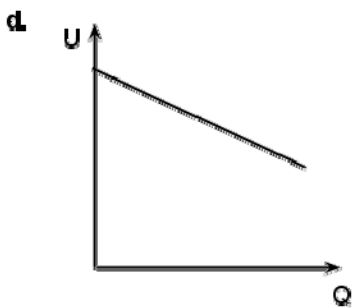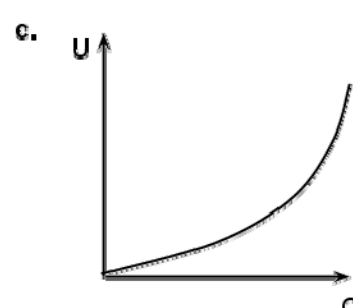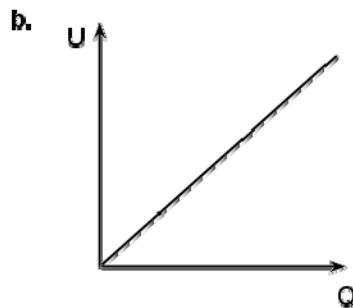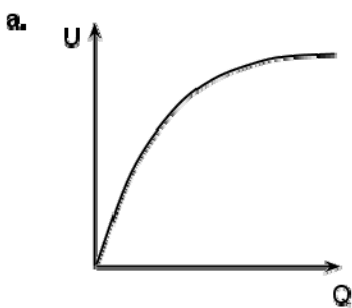
16. The demand for Grouper (a type of fish) is equal to 40 pounds at a price of $20. At any price, if the price of Grouper increases by $1, then demand for grouper decreases by 4 pounds. At what price and quantity would fishermen maximize their total revenue from selling grouper given this information?

    a. $Q = 8, P = \$8$
    b. $Q = 40, P = \$10$
   c. $Q = 12.5, P = \$50$
    d. $Q = 60, P = \$15$

Use the following information for the next **TWO (2) questions**.

Professor Kelly's cookie company has an average total cost curve given by ATC=4/Q+1+Q and a marginal cost curve given by MC=2Q+1.

17. At what price would this company earn zero economic profit?

    a. $4
    b. $2
    c. $5
    d. $6
    e. $1.50

18. The total cost curve for the cookie company is:

    a. $TC=4+Q+Q^2$
    b. $TC=2Q^2+Q$
    c. $TC=2+1/Q$
    d. $TC=4/Q+3Q+2$

19. Suppose that the cross-price elasticity of demand between sun dials and digital clocks is 1.2 for Kim and -0.6 for Luke. This means that Kim views sun dials and digital clocks as _____ and that Luke views sun dials and digital clocks as _____.

    a. complements; substitutes
    b. inferior; normal
    c. normal; inferior
    d. substitutes; complements

Next→

Use the following graphs of a perfectly competitive firm to answer the next **TWO (2) questions**.
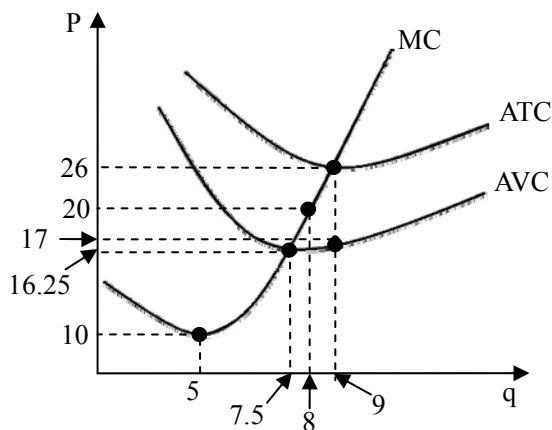
20. In the short run, the firm will produce a positive quantity as long as the price is greater than _____.
In the long run, the firm will produce a positive quantity as long as the price is greater than or equal
to _____.

   a. $16.25; $26
   b. $26; $16.25
   c. $10; $26
   d. $16.25; $16.25

21. What is the value of fixed costs for the firm?

   a. $0
   b. $50
   c. $73
   d. $81

22. If labor is the only variable resource and the firm experiences diminishing returns to labor
then

   a. As the level of output increases, marginal cost will eventually increase.
   b. As the level of output increases, average variable cost may be either decreasing or
      increasing.
   c. Marginal product of labor stays the same as more workers are hired, while marginal
      product of capital decreases.
   d. The firm's total output always decreases as more workers are hired.
   e. Statements (a) and (b) are both true statements.

Next→

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

You are doing a project on inflation in the country of Inflation-topia. You are unable to get much data, but you obtain information on some nominal and real prices. You know that the base year is one of the three years in the table, but you are unsure *which* one it is. You have the following information:

Year	Consumer Price Index [Scale Factor = 1]	Nominal Price of Sweaters	Real Price of Sweaters	Real Income
1934		$12.00		$400
1959			$16.00	$400
2009		$40.00	$16.00	$800

23. **S**uppose that the base year is 1934 and the nominal price of sweaters in 1959 was $32.00. What was the consumer price index in 1959? What was the percent inflation from 1959 to 2009?

   a. Price index = 1/2; Inflation from 1959 to 2009 = 50%
   b. Price index = 2; Inflation from 1959 to 2009 = 20%
   c. Price index = 1/2; Inflation from 1959 to 2009 = 200%
   d. Price index = 2; Inflation from 1959 to 2009 = 25%

24. Using the information in the table as well as the information provided in the last question, what is the value of nominal income in Inflation-topia in 2009?

   a. $1600
   b. $320
   c. $800
   d. $2000

25. **For this question only**, suppose you know that the inflation rate was positive (**larger than zero**) from 1934 to 1959 **and** from 1959 to 2009 in Inflation-topia. Given the information in the table, which of the following statements **could** be true:

   a. The base year was 1959 <u>and</u> the real price of sweaters in 1934 was $6.00.
   b. The base year was 1934 <u>and</u> the nominal price of sweaters in 1959 was $40.00.
   c. The base year was 1934 <u>and</u> the nominal price of sweaters in 2009 was higher than the nominal price of sweaters in 1959.
   d. The base year was 1959 <u>and</u> the real price of sweaters in 1934 was $12.00.

Next→

26. Which of the following answer choices could explain the shift depicted in market for good X from demand line Dx^1 to demand line Dx^2?

Market X
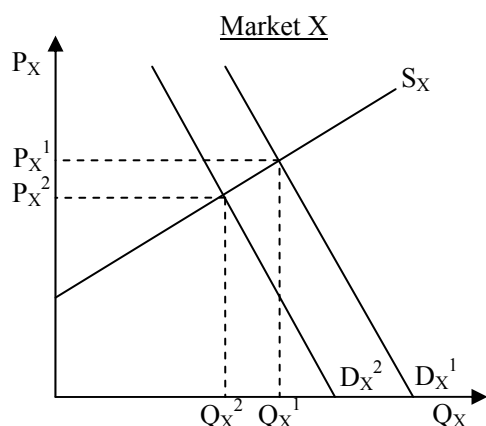
(i) There was an increase in the price of good Y; cross-price elasticity of demand between X and Y is negative.
(ii) There was a decrease in the price of good Y; cross-price elasticity of demand between X and Y is negative.
(iii) There was an increase in income; income elasticity of demand is negative.
(iv) There was a decrease in income; income elasticity of demand is positive.

   a. (i) only
   b. (ii) only
   c. (i) and (iii)
   d. (i), (iii) and (iv)

27. In a perfectly competitive industry, a firm will produce a positive quantity in the short run as long as price is greater than _____. In the long run, a firm will remain in the industry as long as price is greater than or equal to _____.

   a. Average variable cost; average total cost.
   b. Marginal cost; average variable cost.
   c. Average variable cost; average fixed cost.
   d. Average total cost; average variable cost.

28. Phil and Eleanor consume playing cards (PC) and candy (C). They have recently suffered a drop in household income, and now need to figure out how to change their consumption. If Eleanor had it her way, they would cut back on their consumption of playing cards and candy equally. Phil, who is a nervous eater, is happy to cut back on playing cards, but he wants to purchase more candy. Which of the following pairs of income elasticities for Eleanor and Phil accurately reflect this information?

   a. Eleanor: $\varepsilon_{PC} = 1.5,\ \varepsilon_C = 0.9$;   Phil: $\varepsilon_{PC} = 1.5,\ \varepsilon_C = 0$
   b. Eleanor: $\varepsilon_{PC} = -0.8,\ \varepsilon_C = -0.5$;   Phil: $\varepsilon_{PC} = -1,\ \varepsilon_C = 1.5$
   c. Eleanor: $\varepsilon_{PC} = 0.6,\ \varepsilon_C = 0.6$;   Phil: $\varepsilon_{PC} = 6,\ \varepsilon_C = -1.5$
   d. Eleanor: $\varepsilon_{PC} = 0.75,\ \varepsilon_C = 0.75$;   Phil: $\varepsilon_{PC} = -1,\ \varepsilon_C = 0.5$

Next→

Use the graph below to answer the next **TWO (2)** questions.

The graph below represents the indifference curves (U1 and U2) and budget lines (BL1 and BL2) for an individual consuming good x and good y. An additional line, parallel to budget line 2 (BL2) but tangent to U1, has been added for your convenience.
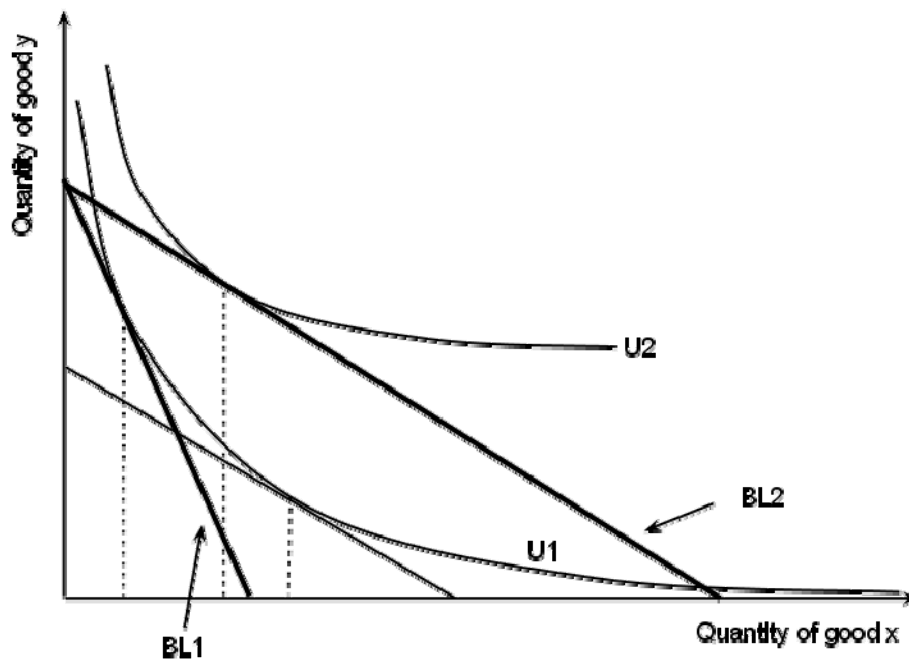
29. Going from BL1 (budget line 1) to BL2 (budget line 2), a change has occurred. Which of the following statements best describes this change?

    a. The individual's income increased.
    b. The individual's income decreased.
    c. The price of good x increased.
    d. The price of good x decreased.
    e. The price of good y decreased.

30. After the shift from BL1 to BL2, we observe that the income effect for good x is _____ and the substitution effect for good x is _____.

    a. Positive; negative
    b. Negative; positive
    c. Negative; negative
    d. Positive; positive

Next→

For the next **THREE (3) questions**, use the following demand and supply curves:

$$D: P = 80 - Q$$
$$S: P = Q$$

31. If the government imposes an excise tax of $2 per unit on suppliers, what will be the market equilibrium price (i.e., the price that **consumers** pay)?

    a. $42
    b. $41
    c. $39
    d. $40
    e. $38

32. What is consumer tax incidence equal to when the excise tax is $2 per unit?

    a. $40
    b. $80
    c. $1.5 per unit
    d. $39
    e. $2 per unit

33. Suppose the government wishes to impose an excise tax in this market that would result in 38 units of the good being sold. What would the excise tax need to be in order to reach this goal?

    a. $4 per unit
    b. $6 per unit
    c. $1 per unit
    d. $3 per unit
    e. $5 per unit

-The End-

15

Answers:

1.A
2.A
3.E
4.E
5.E
6.A
7.B
8.B
9.C
10.B
11.A
12.E
13.A
14.B
15.A
16.D
17.C
18.A
19.D
20.A
21.D
22.E
23.D
24.D
25.C
26.D
27.A
28.C
29.D
30.B
31.B
32.D
33.A