

**Last year's**

**FINAL EXAMINATION**

Name: \_\_\_\_\_

*Note: This is a long exam with many questions, each with equal weight (4 points each). If you don't know the answer to a question, move on and come back to it at the end. If you spend less than 10 minutes per page, you will have time at the end to go back, review and fill in the questions you skipped.*

**Note formats of questions may change!  
This section could be like the midterm,  
asking for T or F in each box**

**PART I. FACTS AND DEFINITIONS**

*(Please put an **X** in the box before the most accurate answer.)*

**In the demographic transition, as countries get richer and living conditions improve,**

1. a country's population growth generally begins with a:

- rise in birth rate     fall in death rate     both     neither

2. a country's population growth rate tends to:

- rise     fall     rise and then fall     fall and then rise

3. the average number of births per woman over her lifespan (the "fertility rate") tends to:

- rise     fall     rise and then fall     fall and then rise

4. the average number of births per 1000 people in each year (the "birth rate") tends to:

- rise     fall     rise and then fall     fall and then rise

5. the average number of years of life per person over their lifespan ("life expectancy") tends to:

- rise     fall     rise and then fall     fall and then rise

6. the average number of deaths per 1000 people in each year (the "death rate") tends to:

- rise     fall     rise and then fall     fall and then rise

7. the fraction of all people who are children (the "child dependency rate") tends to:

- rise     fall     rise and then fall     fall and then rise

8. the fraction of all people who are elderly (the "old-age dependency rate") tends to:

- rise     fall     rise and then fall     fall and then rise

**PART I. FACTS AND DEFINITIONS (continued)**

**During the structural transformation, as countries get richer and living conditions improve,**

9. the share of national output that comes from agriculture usually:

- rises                       falls                       rises then falls                       can't tell

10. the share of national output that comes from services usually:

- rises                       falls                       rises then falls                       can't tell

11. the share of national output that comes from manufacturing usually:

- rises                       falls                       rises then falls                       can't tell

12. the total quantity of agricultural goods produced in the country usually:

- rises                       falls                       rises then falls                       can't tell

13. the total quantity of agricultural goods consumed in the country usually:

- rises                       falls                       rises then falls                       can't tell

14. the total number of workers employed in agriculture usually:

- rises                       falls                       rises then falls                       can't tell

15. the average number of farm workers per acre of agricultural land usually:

- rises                       falls                       rises then falls                       can't tell

***OTHER FACTS AND DEFINITIONS***

16. The average number of children born per woman, in the world's poorest countries, is about:

- 1-2                       3-4                       5-6                       7-8

17. The average number of children born per woman, in the world's richest countries, is about:

- 1-2                       3-4                       5-6                       7-8

18. The average life expectancy of each person, in the world's poorer countries, is about:

- 30                       50                       70                       90

19. The average life expectancy of each person, in the world's richer countries, is about:

- 30                       50                       70                       90

**PART I. FACTS AND DEFINITIONS (continued)**

20. The fastest population growth rates ever seen in the world’s richer countries were about:  
 0.1 %/year       1 %/year       3 %/year       5 %/year
21. The fastest population growth rates ever seen in the world’s poorer countries were about:  
 0.1 %/year       1 %/year       3 %/year       5 %/year
22. If you were to move from a richer to a poorer country with \$1 in PPP terms, you could buy:  
 more things       fewer things       the same things       can’t tell
23. In the world’s poorest countries, the proportion of workers who are farming is around:  
 2.5%       25%       40%       75%
24. In the world’s richest countries, the proportion of workers who are farming is around:  
 2.5%       25%       40%       75%
25. In the world’s poorest countries, the proportion of total income (GDP) from farming is around:  
 2.5%       25%       40%       75%
26. In the world’s richest countries, the proportion of total income (GDP) from farming is around:  
 2.5%       25%       40%       75%
27. In less developed countries, economists typically try to explain farmers’ behavior in terms of:  
 tradition       imitation       randomness       optimization
28. In industrialized countries, economists typically try to explain farmers’ behavior in terms of:  
 tradition       imitation       randomness       optimization
29. Economists often analyze and compare markets using “elasticities”, which are measured in:  
 monetary value       physical quantity       prices (\$/unit)       no units
30. Another useful concept in economics is “economic surplus,” which is defined in terms of:  
 monetary value       physical quantity       prices (\$/unit)       no units

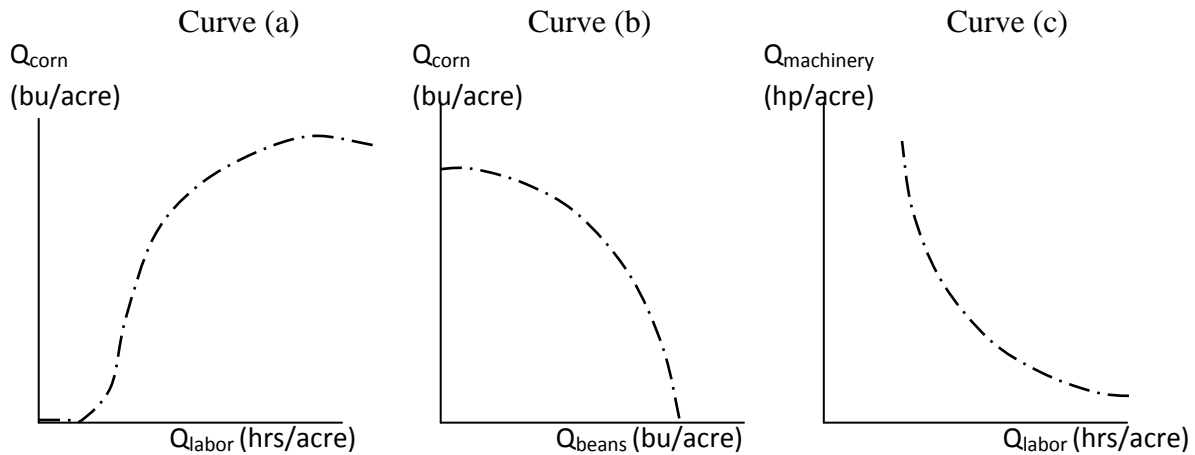
**PART II. ANALYSIS**

**Note sequence and formats may change!  
This section could be like the midterm,  
in which you drew the curves yourself.**

As you know from AGE 340, the prices of food products around the world have fluctuated widely in recent years, provoking widespread anger and frustration. A big question is how much and how quickly farmers can increase production – and how governments will respond to unhappy food consumers. Since you did such a good job this semester, you’ve been hired by Cargill, a large agricultural processing and marketing company, to go to Argentina and help plan their capacity expansion in that important country.

**Section 1. Production choices and economic development**

To predict how Argentinian farmers are likely to respond to change, you work with local agricultural scientists to find the points shown on the charts below, which you connect with the dashed curves. Then, for each curve please *write the most correct answer to the questions below*.



- (1) What is the curve’s name? (write in *Production Possibilities, Isoquant or Input Response*)
 

|           |           |           |
|-----------|-----------|-----------|
| (a) _____ | (b) _____ | (c) _____ |
|-----------|-----------|-----------|
- (2) Which side of each curve is physically impossible to achieve? (write *left, right or neither*)
 

|           |           |           |
|-----------|-----------|-----------|
| (a) _____ | (b) _____ | (c) _____ |
|-----------|-----------|-----------|
- (3) Which side of each curve is technically inefficient if chosen? (write *left, right or neither*)
 

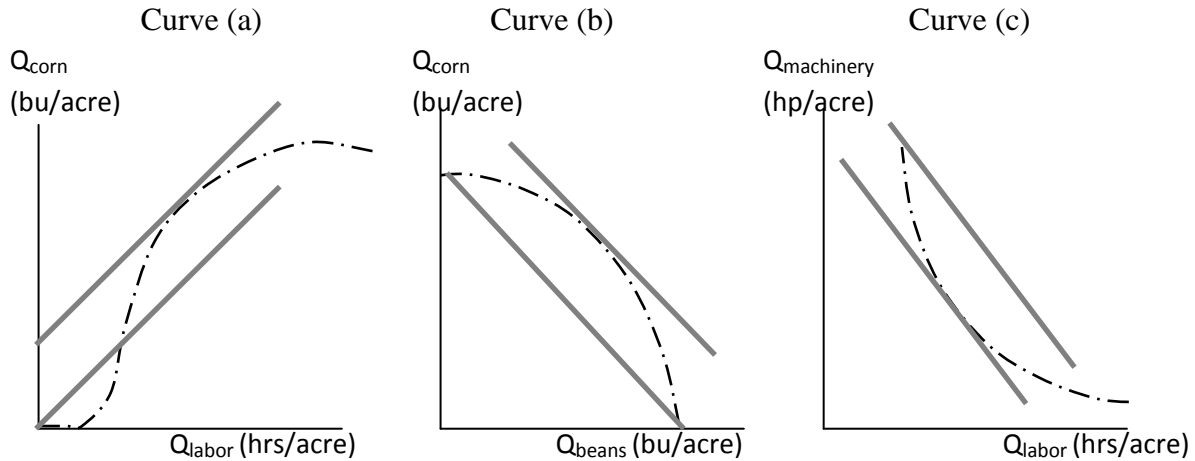
|           |           |           |
|-----------|-----------|-----------|
| (a) _____ | (b) _____ | (c) _____ |
|-----------|-----------|-----------|
- (4) Where on the curves do we predict farmers will be? (*steepest point, highest point, or neither*)
 

|           |           |           |
|-----------|-----------|-----------|
| (a) _____ | (b) _____ | (c) _____ |
|-----------|-----------|-----------|
- (5) What might cause these curves to shift position? (write new *technology, the weather, or both*)
 

|           |           |           |
|-----------|-----------|-----------|
| (a) _____ | (b) _____ | (c) _____ |
|-----------|-----------|-----------|

**PART II, Section 1. (continued)**

The diagram below simply redraws what is on the previous page, with some new lines.



(6) What information is provided by the straight lines? (write *prices, weather, or technology*)

(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

(7) What is the slope of the new lines? (*please write the formula itself, not “rise/run”*)

(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

(8) Which of the two straight lines would a farmer prefer? (write *higher, lower, or neither*)

(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

Now please draw on the diagrams above what changes when corn prices rise, and (for simplicity) everything else stays the same. Then answer the questions below regarding how the diagram changes at the points that you predict the farmer will choose:

(9) How do the slopes of the lines change? (write if they become *steeper, flatter, or neither*)

(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

(10) How do the quantities of what’s on the vertical axes change? (write *rises, falls or neither*)

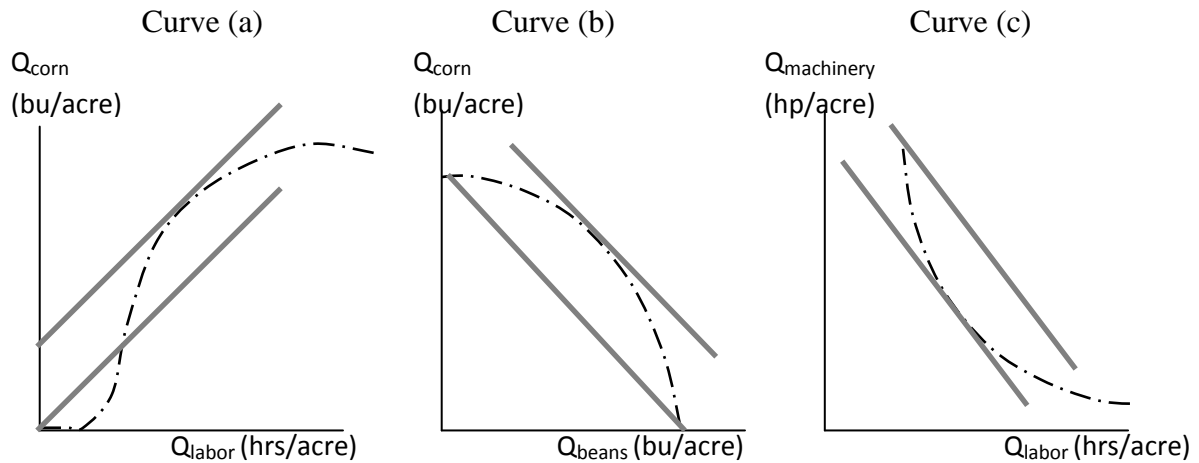
(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

(11) How do the quantities of what’s on the horizontal axes change? (write *rises, falls or neither*)

(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

**PART II, Section 1. (continued)**

The diagram below simply redraws what is on the previous page.



Cargill is concerned about the effects of climate change on the market for their products. For this section, please use the same information as in questions (6)-(8) above, *before* the price rise discussed in questions (9)-(11). On the diagram above, please draw what changes when climate change causes hotter temperatures and lower rainfall in Argentina, so that for a given level of everything else farmers get lower yields of corn – but imagine, for simplicity, that this has no effect on beans, and no effect on the prices of anything.

(12) How do the positions of the dashed curves shift? (write *up*, *down*, *inwards* or *outwards*)

(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

(13) How do the positions of the straight lines shift? (write *up*, *down*, *inwards* or *outwards*)

(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

(14) How do the slopes of the straight lines change? (write *steeper*, *flatter*, or *neither*)

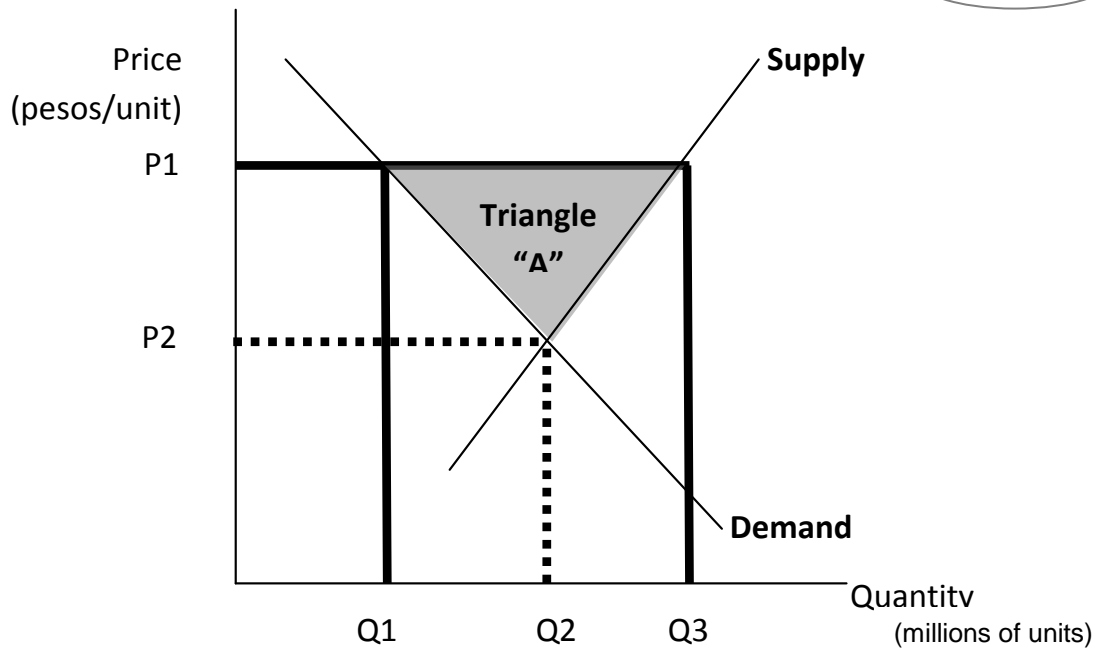
(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

(15) How does farmers' profit level change (write *improves*, *worsens*, or *neither*)

(a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_

**PART II, Section 2. Markets, trade and economic development**

The analysis on the previous pages described choices of an individual producer. Now Cargill asks you to do the math after adding up everyone’s choices, to predict what will happen in the market for corn in Argentina as a whole. Again you work with your local staff to draw the diagram below, then answer the questions below with a circle around the most correct choice.



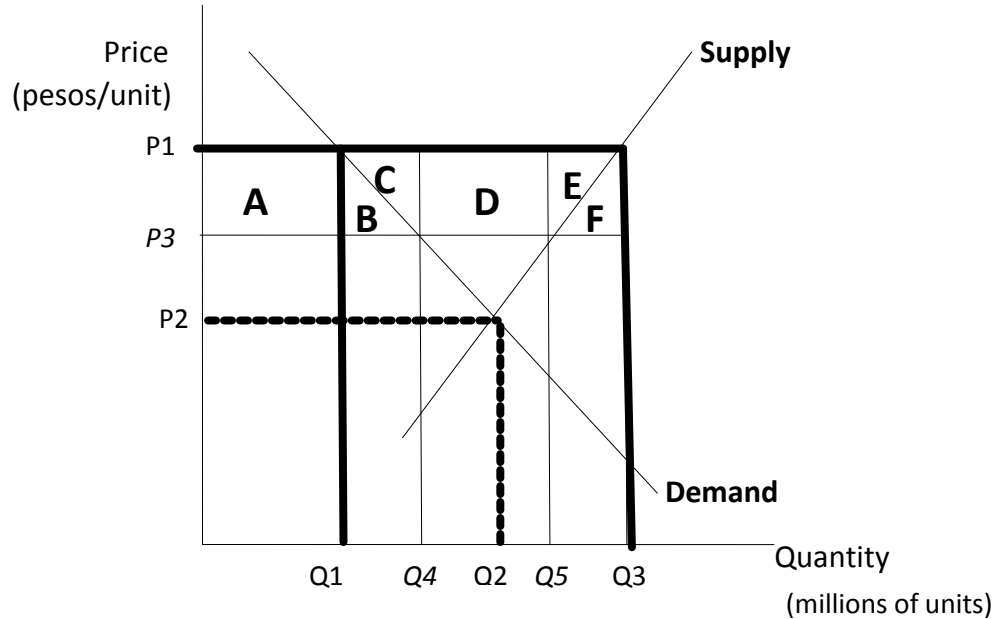
Note that “P1” is the price of corn when it’s loaded on a ship in the ocean, ready for transport to any country in the world.

- (1) If Argentina could not trade with the rest of the world, what quantity would they produce?  
 (a) Q1 (b) Q2 (c) Q3
- (2) If Argentina had free trade with the rest of the world, what quantity would they produce?  
 (a) Q1 (b) Q2 (c) Q3
- (3) If Argentina could not trade with the rest of the world, what price would they have?  
 (a) P1 (b) P2 (c) both
- (4) If Argentina had free trade with the rest of the world, what price would they have?  
 (a) P1 (b) P2 (c) both
- (5) What does Triangle “A” represent?  
 (a) losses from trade (b) gains from trade (c) both
- (6) What are the units of measure for Triangle “A”?  
 (a) Pesos (b) Price (pesos/unit) (c) Quantity (units)

**PART II, Section 2. (continued)**

**Again, format of this section may change!  
Questions could be more similar to the quizzes,  
in which you mark answers with circles, triangles, etc.**

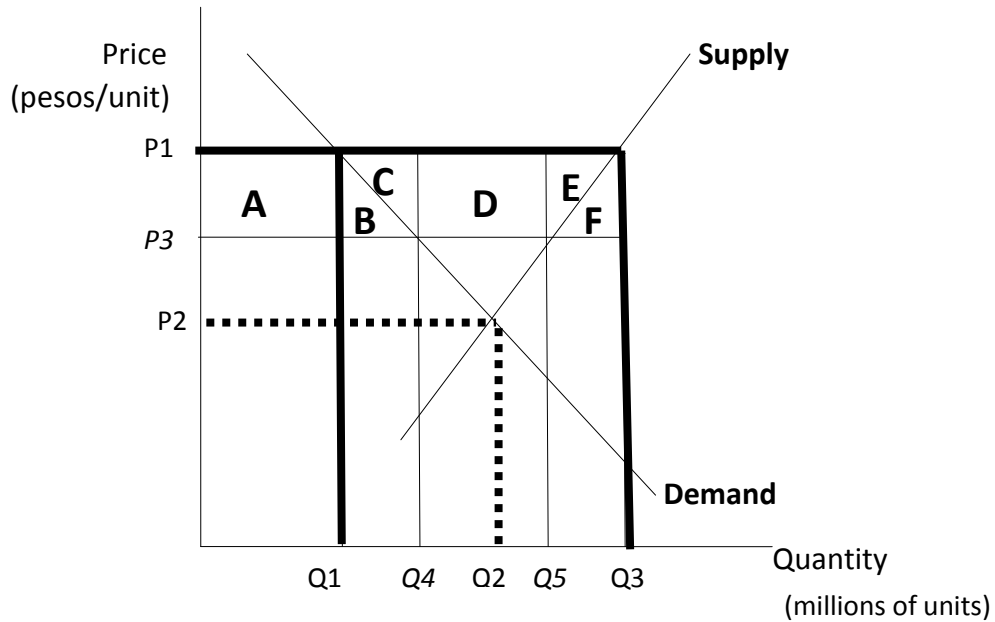
The chart below has the same information for supply, demand, P1 and P2 as on the previous page, plus a line for P3, two new additional quantities Q4 and Q5, and bold letters to show the area of various triangles and rectangles. This information allows you to do the math for one of Argentina’s most important trade policies by circling the most correct choices below.



- (7) If Argentina had free trade with the rest of the world, what quantity would they consume?  
 (a) Q1 (b) Q2 (c) Q3
- (8) What kind of policy could make the price in Argentina equal to P3?  
 (a) an export tax (b) an import tariff (c) both
- (9) Relative to free trade, what does that policy generate as government revenue gain?  
 (a) area AB (b) area BCDEF (c) area D
- (10) Relative to free trade, what does that policy generate as producers’ surplus loss?  
 (a) area AB (b) area ABCDE (c) area D
- (11) Relative to free trade, what does that policy generate as consumers’ surplus gain?  
 (a) area AB (b) area ABCDE (c) area D
- (12) Relative to free trade, what does the policy generate as total economic surplus gain or loss?  
 (a) area C (b) area E (c) both
- (13) Relative to free trade, does the policy generate a total economic surplus gain or a loss?  
 (a) gain (b) loss (c) both

**PART II, Section 2. (continued)**

The chart below shows exactly the same information as on the previous page, but asks two additional questions. As before, please circle the most correct answer below.



(14) In this chart, the “world” price  $P_1$  is drawn as a straight line, but it comes from supply and demand in the rest of the world. It is drawn horizontally, instead of sloped up or down, because:

- (a) Argentina is a big country (b) the world is a big place (c) both

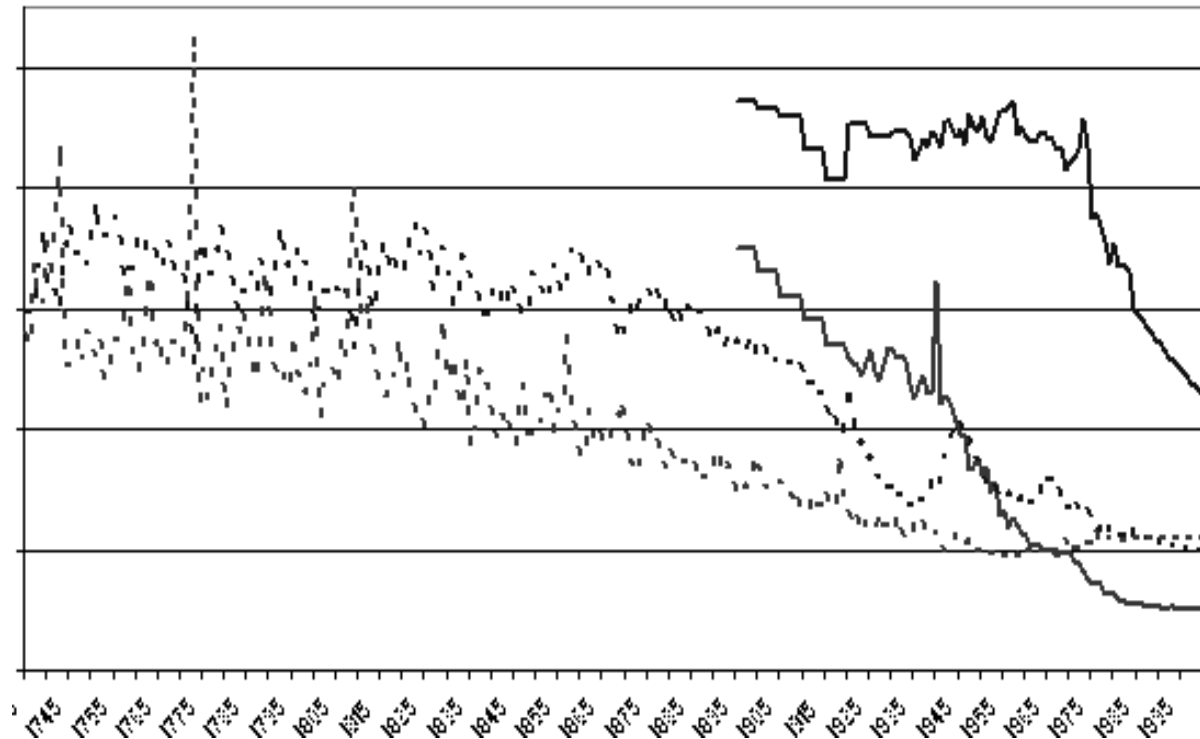
(15) The policy discussed on the previous page is what Argentina’s real-life government is actually doing. Who in Argentina do you think is more influential regarding this policy?

- (a) corn producers (b) corn consumers (c) both

**PART III. HISTORY**

**Format of this section could change to T/F or other types of questions about historical data.**

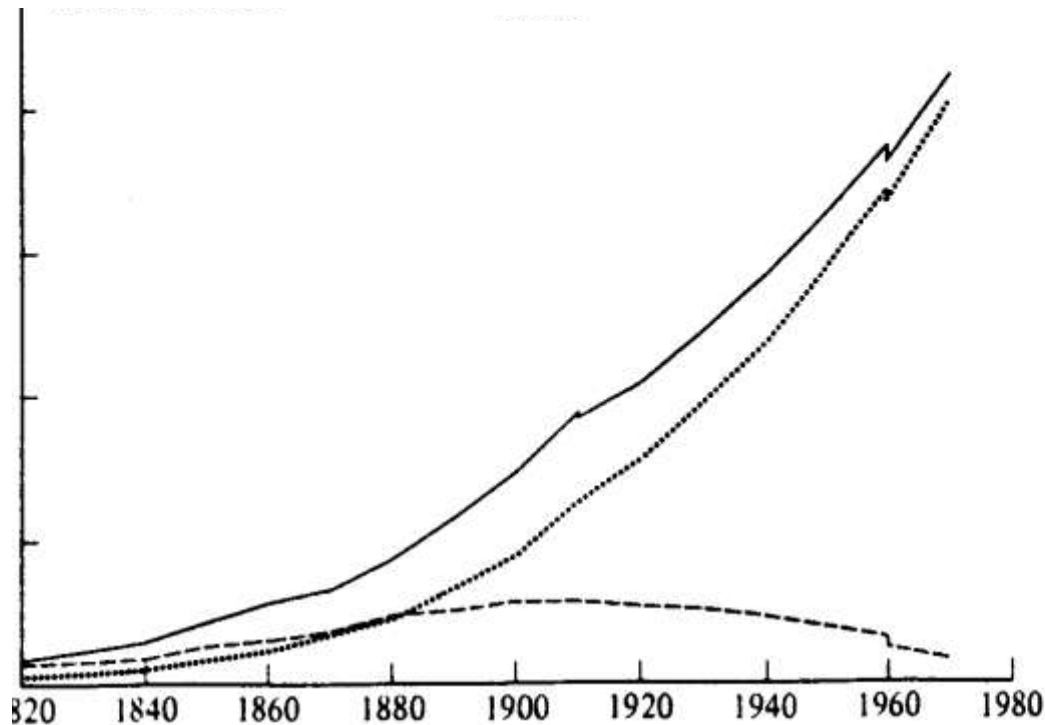
The chart below shows a very important aspect of world economic development, using data from 1745 to 2000. The title and label on the vertical axis have been cut off. What is shown here? From what you learned in AGECE 340, please answer the questions below by circling the most correct choice



- (1) What values are measured along the vertical axis?  
 (a) births & deaths per 1000    (b) numbers of people    (c) both
- (2) In what region of the world is the country shown by the dotted lines?  
 (a) Europe and Scandinavia    (b) Latin America    (c) Asia or Africa
- (3) In what region of the world is the country shown by the solid lines?  
 (a) Europe and Scandinavia    (b) Latin America    (c) Asia or Africa
- (4) What was a major factor behind initial decline in the lower of the two dotted lines?  
 (a) more food consumption    (b) more use of medicine    (c) both
- (5) What was a major factor behind initial decline in the lower of the two solid lines?  
 (a) more food consumption    (b) more use of medicine    (c) both

**PART III. HISTORY (continued)**

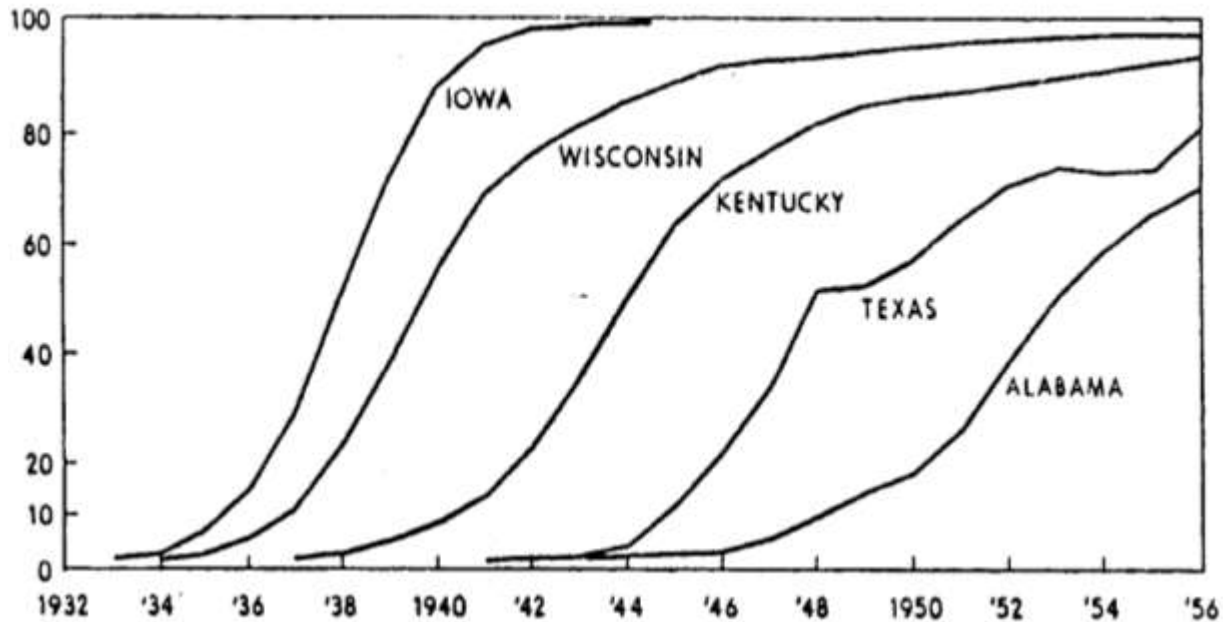
The chart below shows another very important aspect of economic development, using data from 1820 to 1970. Again the title and label on the vertical axis have been cut off. From what you learned in AGEC 340, to explain what is shown here please answer the questions below by circling the most correct choice



- (6) What values are measured along the vertical axis?  
 (a) births & deaths per 1000    (b) numbers of people    (c) both
- (7) In what region of the world is the country shown here?  
 (a) Europe and Scandinavia    (b) The United States    (c) Asia or Africa
- (8) What is shown by the solid line (the highest of the three)?  
 (a) the total    (b) in agriculture    (c) in nonagriculture
- (9) What is happening to the share of the total that is in agriculture?  
 (a) rises over time    (b) falls over time    (c) rises and then falls
- (10) What is happening to the absolute number that is in agriculture?  
 (a) rises over time    (b) falls over time    (c) rises and then falls

**PART III. HISTORY (continued)**

This third chart shows a key aspect of economic development by comparing various states across the U.S. from 1932 to 1956. Again, the title and label on the vertical axis have been cut off, so you can draw on what you learned in AGECE 340 to explain what is shown here, answering the questions below by circling the most correct choice:



- (11) What values are measured along the vertical axis?  
 (a) percent of corn acreage    (b) percent of farm families    (c) both
- (12) What activity is shown on this chart?  
 (a) use of hybrid corn    (b) use of motorized tractors    (c) both
- (13) What can explain why the line for Iowa is above the lines for the other states?  
 (a) farmers' choices    (b) government's choices    (c) both
- (14) How do economists generally explain the differences in those choices?  
 (a) relative prices and profits    (b) habits and traditions    (c) both
- (15) Where else have we seen this S-shaped pattern of new technology adoption?  
 (a) for other technologies    (b) in other regions    (c) both