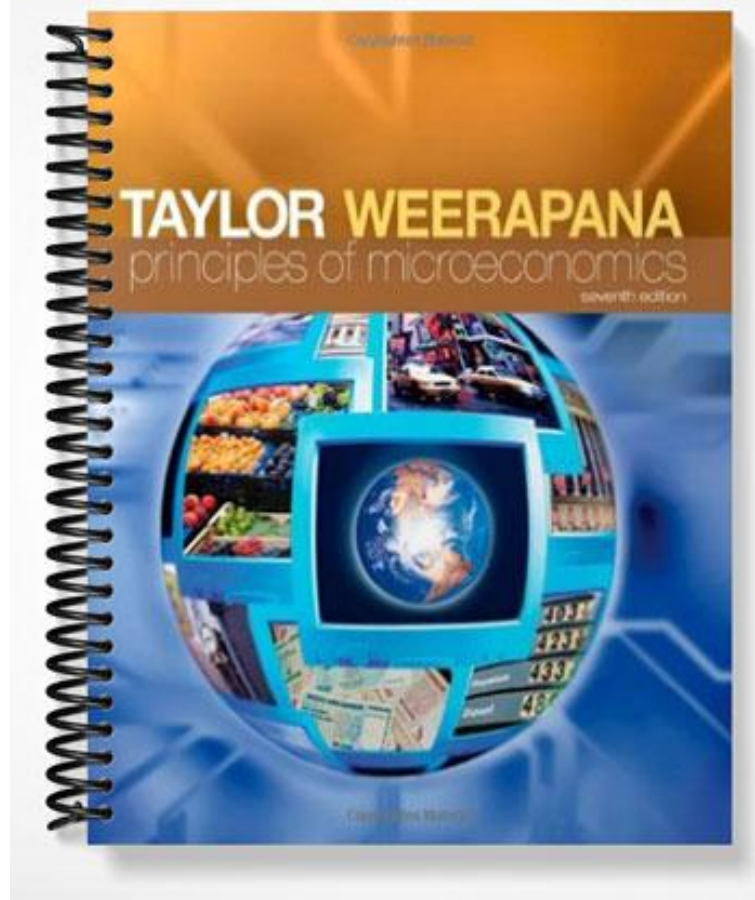


TEST BANK

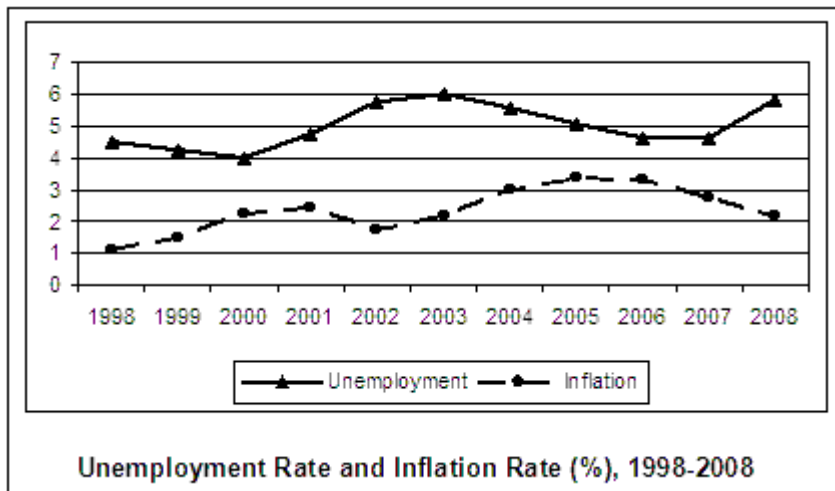


Chapter 2 Appendix—Reading, Understanding, and Creating Graphs

1. A two-dimensional diagram can be represented by the
 - a. depth of this page.
 - b. length of this page.
 - c. surface of this page.
 - d. volume of a book.
 - e. width of this page.

ANS: C PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Graphs BLM: Bloom's: Knowledge

Exhibit 2A-1



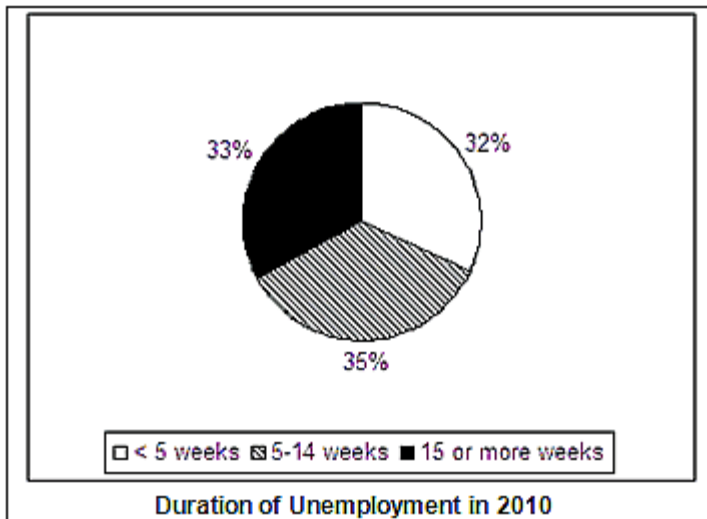
2. Exhibit 2A-1 is an example of a
 - a. bar chart.
 - b. scatter diagram.
 - c. pie chart.
 - d. time-series plot.
 - e. dual-scale diagram

ANS: D PTS: 1 DIF: moderate OBJ: factual
NAT: Reading and interpreting graphs TOP: Graphs BLM: Bloom's: Knowledge

3. According to Exhibit 2A-1, in 2008 the
 - a. inflation rate was close to 5 percent, and the unemployment rate was about 7 percent.
 - b. unemployment rate and the inflation rate were equal.
 - c. inflation rate was close to 6 percent, and the unemployment rate was above 2 percent.
 - d. inflation rate was close to 2 percent, and the unemployment rate was close to 6 percent.
 - e. inflation rate was above 10 percent, and the unemployment rate was close to 2 percent.

ANS: D PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Graphs BLM: Bloom's: Knowledge

Exhibit 2A-2



4. The type of chart shown in Exhibit 2A-2 is referred to as a
- dual-scale diagram.
 - time-series graph.
 - bar chart.
 - pie chart.
 - scatter diagram.

ANS: D PTS: 1 DIF: basic OBJ: factual
 NAT: Reading and interpreting graphs TOP: Pie Charts BLM: Bloom's: Knowledge

5. Suppose in 2010, on average, 10 million people were unemployed. According to Exhibit 2A-2, how many of these people had been unemployed for less than five weeks?
- 3.2 million
 - 3.3 million
 - 3.5 million
 - 32 million
 - 33 million

ANS: A PTS: 1 DIF: moderate OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Pie Charts
 BLM: Bloom's: Application | AACSB: Analytic

6. The slope of an inverse relationship
- must be positive.
 - is calculated by dividing the variable on the horizontal axis by the variable on the vertical axis.
 - must be negative.
 - can never be measured.
 - must be constant everywhere along the curve.

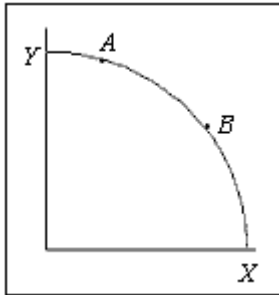
ANS: C PTS: 1 DIF: moderate OBJ: factual
 NAT: Reading and interpreting graphs TOP: Slopes
 BLM: Bloom's: Knowledge | AACSB: Analytic

7. An inverse relationship between two variables indicates a
- causation.
 - constant slope.
 - positive slope.

d. negative slope.

ANS: D PTS: 1 DIF: moderate OBJ: factual
NAT: Reading and interpreting graphs TOP: Slopes BLM: Bloom's: Knowledge

Exhibit 2A-3



8. In Exhibit 2A-3, the curve shows
- a constant relationship.
 - a direct relationship.
 - a straight-line relationship.
 - an inverse relationship.
 - normative economics.

ANS: D PTS: 1 DIF: moderate OBJ: factual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Analysis | AACSB: Analytic

9. In Exhibit 2A-3, the curve has a
- positive slope with decreasing absolute value.
 - negative slope with decreasing absolute value.
 - negative slope with increasing absolute value.
 - constant negative slope.
 - positive slope with increasing absolute value.

ANS: C PTS: 1 DIF: moderate OBJ: factual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Knowledge | AACSB: Analytic

10. According to Exhibit 2A-3, which of the following is *true*?
- The magnitude of the slope at point *B* is the same as it is at point *A*.
 - The magnitude of the slope at point *A* is less than the magnitude of the slope at point *B*.
 - The slope at point *A* is negative, whereas the slope at point *B* is positive.
 - The magnitude of the slope at point *B* is less than the magnitude of the slope at point *A*.
 - The magnitude of the slope at point *A* is greater than the magnitude of the slope at point *B*.

ANS: B PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Analysis | AACSB: Analytic

11. A curve shows that every time family income increases by \$1, spending increases by \$.75. This curve would
- have a negative slope with decreasing absolute value.
 - have a positive slope with increasing absolute value.
 - have a negative slope with increasing absolute value.

- d. have a positive slope with decreasing absolute value.
- e. be a straight line with a positive slope.

ANS: A PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Application | AACSB: Analytic

12. Suppose a curve shows that every time family income increases by \$1, spending increases by \$.75. If family income increases by \$500, then spending will increase by
- a. \$667.
 - b. \$125.
 - c. \$375.
 - d. \$500.

ANS: C PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Application | AACSB: Analytic

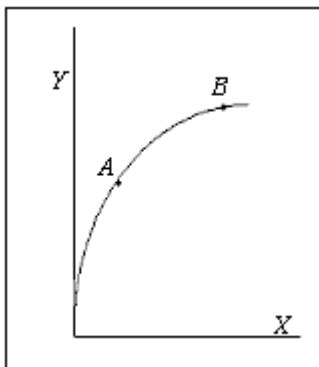
13. Suppose a curve shows that every time family income increases by \$1, spending increases by \$.75. If spending increases by \$500, then income increased by
- a. \$667.
 - b. \$500.
 - c. \$375.
 - d. \$125.

ANS: A PTS: 1 DIF: challenging OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Application | AACSB: Analytic

14. A relationship showing that exam grades are positively related to hours of study can be described by a curve that
- a. slopes downward.
 - b. is horizontal.
 - c. has a negative slope with increasing absolute value.
 - d. slopes upward.
 - e. has a negative slope with decreasing absolute value.

ANS: C PTS: 1 DIF: challenging OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Analysis | AACSB: Analytic

Exhibit 2A-4



15. The curve in Exhibit 2A-4 represents a(n)
- negative slope.
 - slope that is constant *and* positive.
 - slope that is not constant *and* positive.
 - inverse relationship.
 - slope that is constant.

ANS: C PTS: 1 DIF: moderate OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Slopes BLM: Bloom's: Knowledge

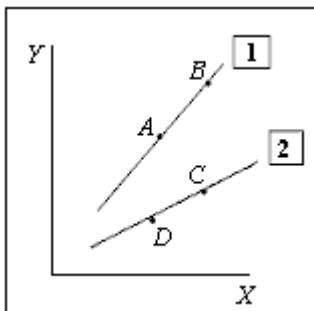
16. Refer to Exhibit 2A-4. The slope of the relationship between X and Y is
- positive.
 - negative.
 - zero.
 - infinity.
 - less than -1 .

ANS: A PTS: 1 DIF: moderate OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Slopes
 BLM: Bloom's: Application | AACSB: Analytic

17. Refer to Exhibit 2A-4. Which of the following statements is *true*?
- The slope at point B is greater than the slope at point A .
 - The slope at point A is less than the slope at point B .
 - The slope at point A is greater than the slope at point B .
 - The slope at point B is the same as the slope at point A .
 - The slope at point A is negative, whereas the slope at point B is positive.

ANS: C PTS: 1 DIF: moderate OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Slopes
 BLM: Bloom's: Analysis | AACSB: Analytic

Exhibit 2A-5



18. *T* or *F*. According to Exhibit 2A-5, the slope of line 1 may be 1.25, whereas the slope of line 2 may be .75.

ANS: T PTS: 1 DIF: challenging OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Slopes
 BLM: Bloom's: Application | AACSB: Analytic

19. Refer to Exhibit 2A-5. The movement from A to B is called a
- change in dimension.
 - shift in the curve.

- c. movement along the curve.
- d. change in the intercept.
- e. change in the slope.

ANS: C PTS: 1 DIF: moderate OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Slopes
 BLM: Bloom's: Analysis | AACSB: Analytic

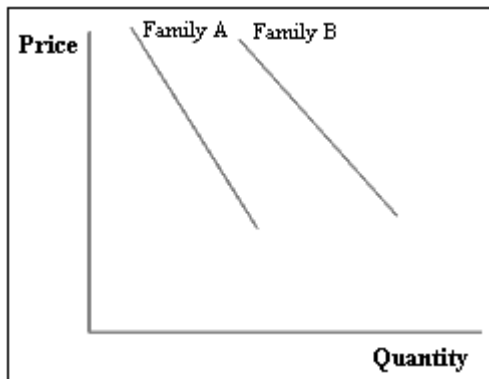
20. Refer to Exhibit 2A-5. The movement from *C* to *B* is called a
- a. change in dimension.
 - b. shift in the relationship between *X* and *Y*.
 - c. movement along the curve.
 - d. parallel change.
 - e. constant.

ANS: B PTS: 1 DIF: moderate OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Slopes
 BLM: Bloom's: Knowledge | AACSB: Analytic

21. Refer to Exhibit 2A-5. Which of the following would best explain the shift from line 1 to line 2?
- a. An increase in *X*
 - b. A decline in *Y*
 - c. A decrease in *X*
 - d. A change in a third variable, *Z*, which affects the relationship between *Y* and *X*
 - e. An increase in the slope

ANS: D PTS: 1 DIF: moderate OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Slopes
 BLM: Bloom's: Analysis | AACSB: Analytic

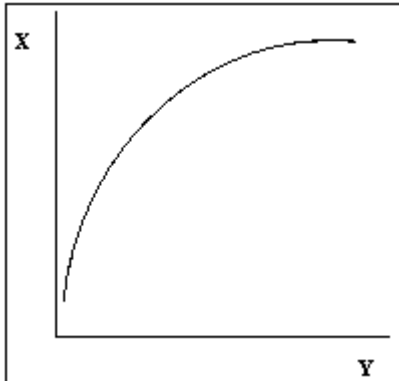
Exhibit 2A-6



22. Exhibit 2A-6 shows the relationship between the price of sodas and the quantities that two families are willing to buy. Suppose that both families are willing to buy more sodas while the soda price remain constant. Which of the following is correct?
- a. A shift of both curves to the right
 - b. A shift of both curves to the left
 - c. A shift of the curve for Family A to the right and a shift of the curve for Family B to the left
 - d. A shift of the curve for Family B to the right and a shift of the curve for Family A to the left
 - e. A movement along each of the two curves

ANS: A PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Graphs
BLM: Bloom's: Analysis | AACSB: Analytic

Exhibit 2A-7



23. Exhibit 2A-7 shows the relationship between X and Y . The slope of the relationship is
- positive, and the slope increases with Y .
 - positive, and the slope decreases with Y .
 - equal to -1 .
 - negative, and the slope increases with Y .
 - negative, and the slope decreases with Y .

ANS: B PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Knowledge | AACSB: Analytic

Exhibit 2A-8

X	Y
25	60
33	69
40	76
42	78

24. T or F . There is a linear relationship between X and Y in Exhibit 2A-8.

ANS: F PTS: 1 DIF: challenging OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Analysis | AACSB: Analytic

25. T or F . The slope of the relationship between X and Y is positive in Exhibit 2A-8.

ANS: T PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Analysis | AACSB: Analytic

26. T or F . Suppose the value of one variable rises while the value of another variable falls; then the slope of the relationship between the two variables is between 0 and 1.

ANS: F PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Analysis | AACSB: Analytic

27. *T or F.* A two-dimensional graph cannot be used to show what will happen to the relationship between *X* and *Y* if any of the *ceteris paribus* assumptions change.

ANS: F PTS: 1 DIF: challenging OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Slopes
BLM: Bloom's: Analysis | AACSB: Analytic

28. Explain the purpose of each of the following types of graphs:
(A) Time-series graph
(B) Scatter plot
(C) Pie chart

ANS:

- (A) A time-series graph is used to show how the values of a variable change over time.
(B) A scatter plot is used to compare two variables to determine if and how they are correlated.
(C) A pie chart is used for comparing percentage shares for a small number of different groups or a small number of time periods.

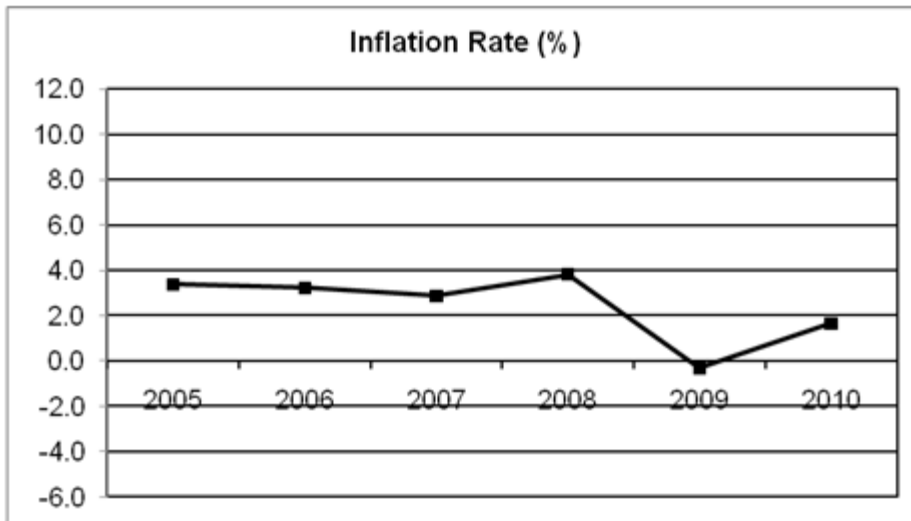
PTS: 1 DIF: moderate OBJ: factual
NAT: Reading and interpreting graphs TOP: Visualizing Observations with Graphs
BLM: Bloom's: Knowledge

29. The table below shows the inflation rate for the period 2005 through 2010. Suppose you wanted to show that there was not much variation in the inflation rate over this period. How would you represent this table in a graph? Suppose you wanted to show that there was a large amount of variation during this period. How would you represent this table in a graph?

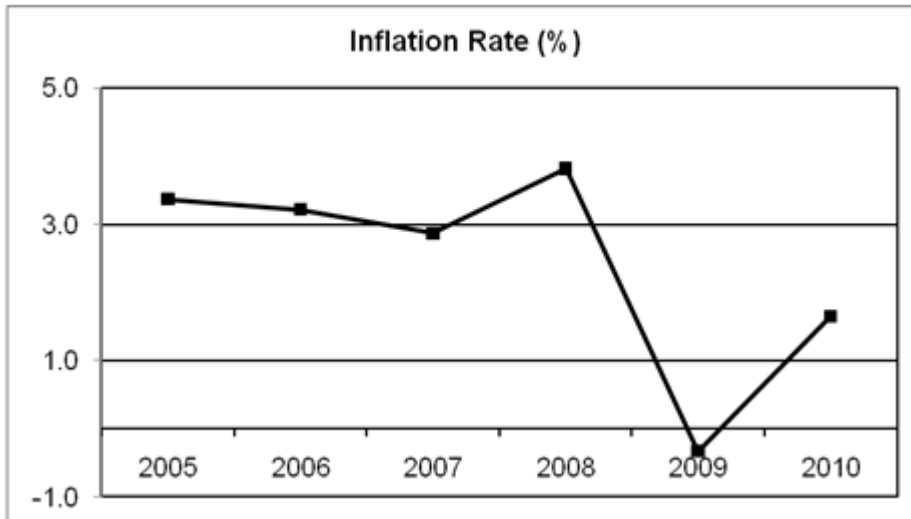
Year	Inflation Rate (%)
2005	3.4
2006	3.2
2007	2.9
2008	3.8
2009	-0.3
2010	1.7

ANS:

The figure below is drawn such that the maximum value on the vertical axis is 12 percent. Changes in the inflation rate seem slight.



The figure below is purposely drawn large, and the maximum value on the vertical axis is 5 percent. Here the changes in the inflation rate seem large.

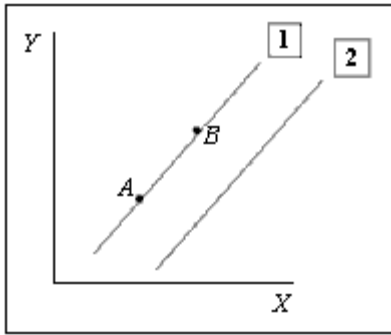


PTS: 1 DIF: challenging OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Time-Series Graphs
 BLM: Bloom's: Application | AACSB: Analytic

30. Graph the relationship between X and Y such that the relationship between X and Y is linear and positive.
- (A) On this graph, show what happens to Y if X increases.
 - (B) Suppose there is a third variable, Z , that causes Y to decrease (for any given value of X) whenever Z increases. Show what happens to the relationship between X and Y .

ANS:

Line 1 in the figure below shows the linear and positive relationship between X and Y . An increase in X causes a movement from A to B along line 1. The increase in Z causes the shift from line 1 to line 2. Notice that this is the same as saying that the value of Y decreases for any given value of X .



PTS: 1 DIF: challenging OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Slopes
 BLM: Bloom's: Knowledge | AACSB: Analytic

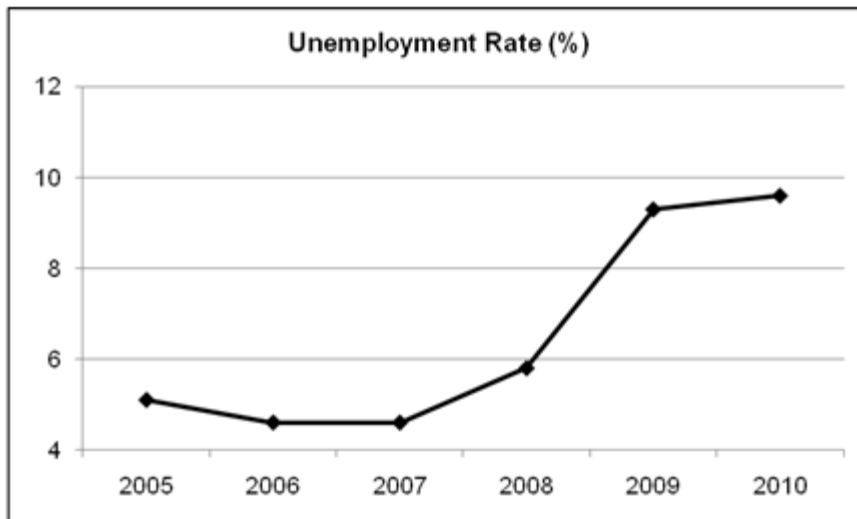
31. Refer to the table below, which shows data for the United States.

Year	Unemployment Rate (%)	Inflation Rate (%)
2005	5.1	3.4
2006	4.6	3.2
2007	4.6	2.9
2008	5.8	3.8
2009	9.3	-0.3
2010	9.6	1.7

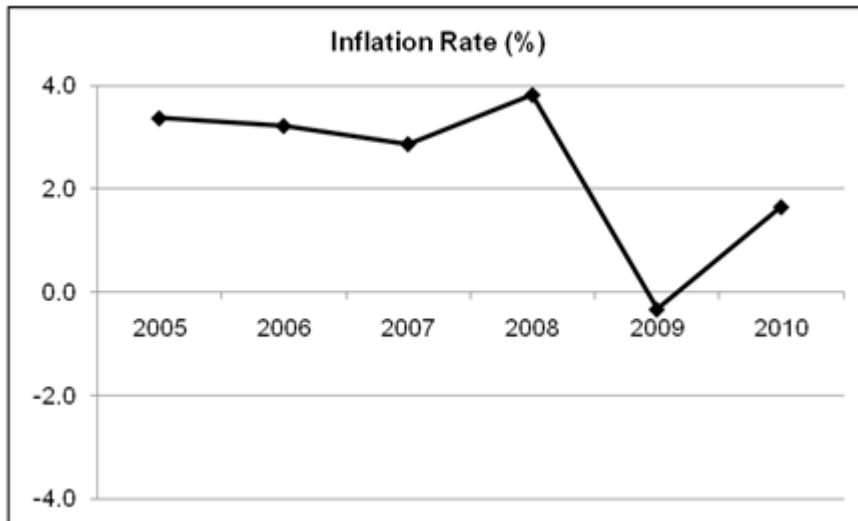
- (A) Construct a time-series plot of the unemployment rate.
- (B) Construct a time-series plot of the inflation rate.
- (C) Construct a scatter plot of the data. Is there any apparent correlation between the inflation rate and the unemployment rate in these data?

ANS:

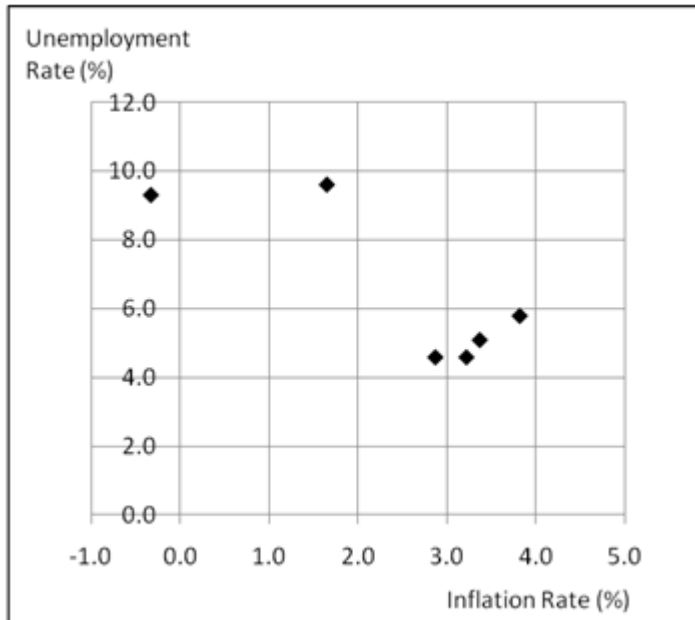
- (A) A time-series plot of the unemployment rate:



(B) A time-series plot of the inflation rate:



(C) A scatter plot is shown below. There is an apparent negative correlation between the inflation rate and the unemployment rate.



PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Working with Data
BLM: Bloom's: Application | AACSB: Analytic

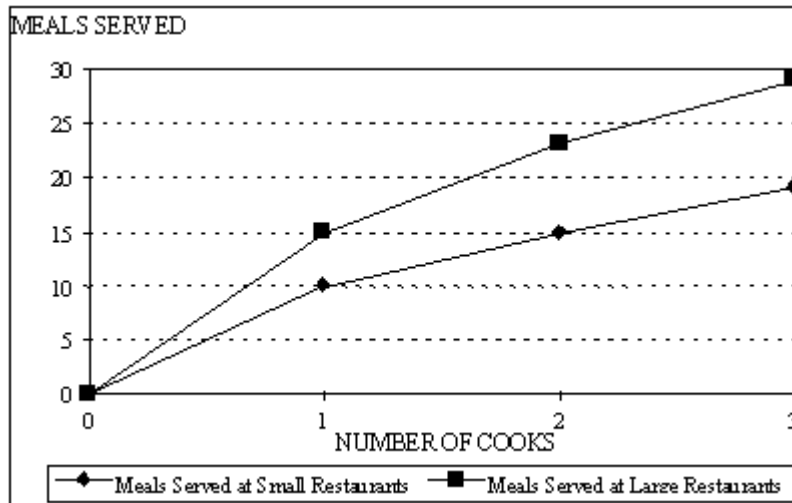
32. Refer to the table below. Analyze the data on the number of meals served at small and large restaurants. The number of meals served will vary with the number of cooks employed at the restaurant.

Meals Served at Small Restaurants	Meals Served at Large Restaurants	Number of Cooks
0	0	0
10	15	1
15	23	2
19	29	3

- (A) Show the relationship between cooks and meals served by graphing two curves with cooks on the horizontal axis and the number of meals on the vertical axis. How do the slopes of the curves change as more cooks are employed?
- (B) Is the change in the number of cooks a shift in the curve or a movement along the curve?
- (C) Is the change in the size of the restaurant a shift in the curve or a movement along the curve?

ANS:

- (A) The relationship between cooks and meals served by graphing two curves with cooks on the horizontal axis and the number of meals on the vertical axis:



The slopes of the curves get flatter as more cooks are employed.

- (B) The change in the number of cooks is a movement along the curve.
- (C) The change in the size of the restaurant constitutes a shift in the curve.

PTS: 1 DIF: moderate OBJ: conceptual
 NAT: Reading and interpreting graphs TOP: Working with Data
 BLM: Bloom's: Application | AACSB: Analytic

33. Consider a ratio for the total number of miles traveled by car divided by the total number of drivers.
- (A) If both the total number of miles traveled by car and the total number of drivers increase over time, what must be true for the ratio to rise over time?
- (B) If both the total number of miles traveled by car and the total number of drivers fall over time, what must be true for the ratio to rise over time?
- (C) If the ratio is not changing over time, what must be true about the total number of miles traveled by car and the total number of drivers over time, and relative to each other?

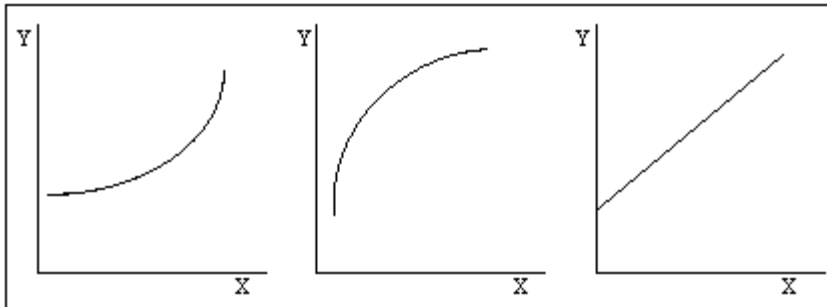
ANS:

- (A) The total number of miles traveled by car must increase faster than the total number of drivers.
- (B) The total number of drivers must decrease faster than the decrease in the total number of miles traveled by car.
- (C) The total number of miles traveled by car must increase or decrease at the same rate as does the total number of drivers.

PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Ratio Scale
BLM: Bloom's: Application | AACSB: Analytic

34. A positive relationship represents a situation where an increase in one variable is associated with an increase in the other variable. Draw three graphs that represent a positive relationship.

ANS:



PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Relationship between Variables
BLM: Bloom's: Application | AACSB: Analytic

35. Consider a straight line with a slope of +1 that intersects the origin. It dissects the positive X - Y quadrant. Select any point on the line. What must be true about the distance between the origin and the X coordinate and between the origin and the Y coordinate?

ANS:

The distance is the same.

PTS: 1 DIF: moderate OBJ: conceptual
NAT: Reading and interpreting graphs TOP: Graphs
BLM: Bloom's: Analysis | AACSB: Analytic