1. Please show any shifts in supply and/or demand in the graph to the right. Please also indicate in the spaces below what will happen to supply, demand, price and quantity. Label the axes.

Let us suppose people like to combine lettuce and tomatoes in their salads. What impact will the recent increase in the price of tomatoes have on the market for lettuce?

Supply ↓, Demand ↓, Price ↓, Complements ↓, Quantity ↓

2. Let us suppose that we observe the following in the market for tomatoes.

<table>
<thead>
<tr>
<th>Month</th>
<th>Price</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov.</td>
<td>$2.00</td>
<td>60 pounds</td>
</tr>
<tr>
<td>Dec.</td>
<td>$3.00</td>
<td>20 pounds</td>
</tr>
</tbody>
</table>

a. Calculate the elasticity of demand for tomatoes

\[
\text{elasticity} = \frac{\frac{\partial Q}{\partial P}}{\frac{P}{Q}} = \frac{\frac{\Delta Q}{\Delta P}}{\frac{P}{Q}} = \frac{\frac{60}{20}}{\frac{3}{2}} = 1.33
\]

SHOW YOUR WORK.

b. Is the demand for tomatoes elastic? Please explain what you base your answer on.

Yes, elasticity > 1

c. What happened to total revenue as the price changed?

\[
\text{Revenue} = P \times Q = 2 \times 60 = 120
\]

\[
\text{Revenue} = P \times Q = 3 \times 20 = 60
\]

Rev ↓
3. Suppose you are given the following cost information for the A-One Nail Company. Let us assume that the market for nails is perfectly competitive and the price is $5 per box of nails.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Fixed Cost</th>
<th>Marginal Cost</th>
<th>Variable Cost</th>
<th>Total Cost</th>
<th>Average Total Cost</th>
<th>Marginal Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>--</td>
<td>0</td>
<td>1</td>
<td>--</td>
<td>$5</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>5</td>
<td>8</td>
<td>9</td>
<td>4.5</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>7</td>
<td>15</td>
<td>16</td>
<td>5.33</td>
<td>5</td>
</tr>
</tbody>
</table>

Please fill in the blanks for all of the columns in the table.

4. a. Please refer again to the numbers in the previous problem. In order to maximize profit, how many boxes should A-One bring to market?

\[ 2 \] \[ MC = MC \] \[ Q = 2 \]

b. What would be A-One’s profit if they bring that amount to market?

\[ TR = P \times Q = 5 \times 2 = 10 \]
\[ TC = 9 \]
\[ \frac{TR - TC}{Q} = 1 \]

Is A-One's profit positive?

\[ \text{Yes} \]

\[ \text{MC} = \text{MC} \]
\[ \text{Profit} \]
\[ \text{Making} \]
\[ \text{Operating} \]
\[ \text{Loss} \]

Should A-One operate in the short-run? Should they operate in the long-run?

\[ \text{Yes} \]

\[ \text{Yes} \]

\[ \text{Making} \]
\[ \text{Operating} \]

\[ \text{MC} = \text{MC} \]

b. In the space to the right, please draw A-One’s supply curve. Make sure that you carefully number and label the axes.
5. Suppose that in 2006 the SuperBowl (a big football game) is only available for viewing on cable-television as a pay-per-view event. The local cable TV company must pay $10 for the right to show the game and pay the National Football League $2 for every person they get to view it. The demand by the cable company’s customers is given below.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>$16</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>$10</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

a. What would be the price and quantity charged by the monopolist?

\[ MR = MC \Rightarrow Q = \frac{P}{3} \] (Business ATC)

\[ P = 8 \]

b. How much profit would the monopolist make?

\[ Q = 4 \]

\[ TR = P \times Q = 8 \times 4 = 32 \]

\[ TC = \frac{114}{14} \]

\[ \text{Profit} = TR - TC = 32 - \frac{114}{14} \]

\[ \text{Profit} = \frac{28}{14} \]

\[ \text{Profit} = 2 \]

b. How would the price the monopolist charged and the number of customers compare to a perfectly competitive situation? (Just state greater than, less than, same or indeterminate. No numbers needed.)

\[ P > \text{greater} \quad Q < \text{smaller} \]

6. The results of a survey of consumers show that they each purchase 5 pounds of walnuts and 3 pounds of pine nuts, and nothing else.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>$0.75</td>
<td>$2.50</td>
</tr>
<tr>
<td>2001</td>
<td>$1.25</td>
<td>$3.00</td>
</tr>
<tr>
<td>2002</td>
<td>$1.50</td>
<td>$3.50</td>
</tr>
</tbody>
</table>

a. What is consumer price index for each year, assuming 2000 is the base year?

\[ \text{CPI} = \frac{\text{Cost of Goods}}{\text{Base Year Cost of Goods}} \times 100 \]

\[ \text{CPI 2001} = \frac{11.25}{10.00} \times 100 = 112.5 \]

\[ \text{CPI 2002} = \frac{15.75}{11.25} \times 100 = 138.75 \]

b. What is inflation rate between 2001 and 2002, assuming 2000 is the base year?

\[ \text{Inflation Rate} = \frac{\text{CPI 2002} - \text{CPI 2001}}{\text{CPI 2001}} \times 100 \]

\[ \text{Inflation Rate} = \frac{138.75 - 112.5}{112.5} \times 100 = 22.5\% \]
*7. Suppose that there are many restaurants in the city and that each has a somewhat different menu.

a. In Exhibit 1, draw the diagram of the cost curves (average total cost and marginal cost), demand curve and marginal revenue curve for Mario’s Pizza when it is in long-run equilibrium.

Exhibit 1

![Diagram of cost curves showing ATC and MC curves, demand curve (D), and marginal revenue curve (MR). There is a point of intersection where ATC and MC intersect, indicating the long-run equilibrium point.]


No, since there is free entry, profit causes firms to enter the industry, which reduces the existing demand faced by profitable firms until \( \pi = 0 \) and \( \pi = 0 \).
8. (12 points)
a. In the graphs below draw a short run and a long run Phillips Curve. LABEL THE AXES. 
(You need not number them.) Pay careful attention to the curves in relation to the axis.

b. Does the short run Phillips Curve touch the vertical axis? Please explain why or why not.

No. There is always some unemployment (Frictional, and Structural).

c. Mark a spot on the middle of the short run Phillips Curve and label it 1. Show what happens to 
the short run Phillips Curve if the government raises taxes and decreases spending. Note the new 
value with a 2.

d. Mark a spot on the middle of the long run Phillips Curve and label it 1. Show what happens to 
the long run Phillips Curve if the government raises taxes and decreases spending. Note the new 
value with a 2.

e. Suppose the government kept taxes at this higher level and the spending at this lower level for 
ten years. Would the short run Phillips curve shift? Explain.

Yes. People would current expect lower inflation and with lower inflation, the whole Phillips curve would 
shift to the left.

f. Suppose the government kept taxes at this higher level and the spending at this lower level for 

No. We would just be at pl. 2. The level of 
unemployment would return to back to the natural rate.
9. Use Exhibit 4 to answer the following questions. (10 points)

EXHIBIT 4

a. If trade is not allowed, what is the equilibrium price and quantity in this market?

At point where supply and demand intersect

\[ P = 8 \] \[ Q = 40 \]

b. If trade is allowed, will this country import or export this commodity? Why?

Import. The world price is only 2.

So cheap, to buy it in from abroad

c. If trade is allowed, what is the price at which the good is sold, the domestic quantity supplied and demanded, and the quantity imported or exported?

\[ P = 2 \]
\[ \text{Dom } Q_s = 20 \]
\[ \text{Dom } Q_d = 60 \]
\[ \text{Imports} = 40 \]

d. What area corresponds to consumer surplus if trade is allowed?

\[ A + 2 = P \]
\[ \text{Area between } D \text{ and } 2 \]
\[ A + B + D + E \]

e. What area corresponds to the gains from trade?

\[ D + E \]
The following table shows the units of output a worker can produce per month in Australia and Korea. Use this table for question 11.

<table>
<thead>
<tr>
<th></th>
<th>Food</th>
<th>Electronics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Korea</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

*11 Which of the following statements about absolute advantage is true?
a. Australia has an absolute advantage in the production of food while Korea has an absolute advantage in the production of electronics.
b. Korea has an absolute advantage in the production of food while Australia has an absolute advantage in the production of electronics.
c. Australia has an absolute advantage in the production of both food and electronics.
d. Korea has an absolute advantage in the production of both food and electronics.

*12 In the short run, if the price is above average total cost in a monopolistically competitive market, the firm makes
a. losses and firms enter the market.
b. losses and firms exit the market.
c. profits and firms enter the market.
d. profits and firms exit the market.

Use the following table for the next question

<table>
<thead>
<tr>
<th>Labor (number of workers)</th>
<th>Output per Hour</th>
<th>Marginal Product of Labor</th>
<th>Value of the MPL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*13 If this profit-maximizing firm sells its output in a competitive market for $3 per unit and hires labor in a competitive market for $8/hour, then this firm should hire.

a. one worker.
b. two workers.
c. three workers.
d. four workers.
e. five workers.
*14. According to the Bureau of Labor Statistics, a husband who chooses to stay home and take care of the household is  
   a. unemployed.
   b. employed.
   c. not in the labor force.
   d. a discouraged worker.

*15. If the reserve requirement is 25 percent, the value of the money multiplier is  
   a. 0.25.
   b. 4.
   c. 5.
   d. 25.
   e. none of the above.

*16. Suppose that, because of inflation, people in Brazil economize on the currency and go to the bank each day to withdraw their daily currency needs. This is an example of  
   a. shoeleather costs.
   b. menu costs.
   c. costs due to inflation induced tax distortions.
   d. costs due to inflation induced relative price variability which misallocates resources.
   e. costs due to confusion and inconvenience.

*17. If the nominal interest rate is 6 percent and the inflation rate is 3 percent, the real interest rate is  
   a. 3 percent.
   b. 6 percent.
   c. 9 percent.
   d. 18 percent.
   e. none of the above.

*18. If the Fed were to continuously use expansionary monetary policy in an attempt to hold unemployment below the natural rate, the long-run result would be  
   a. an increase in the level of output.  
   b. a decrease in the unemployment rate.  
   c. an increase in the rate of inflation.  
   d. all of the above.

*19. Because producers are better able to organize (more concentrated) than consumers (more diffuse), we would expect there to be political pressure to create  
   a. free trade.
   b. import restrictions.
   c. export restrictions.
   d. none of the above.

*20. If the U.S. saves $1,000 billion and U.S. net capital outflow is $200 billion, U.S. domestic investment is  
   a. -$200 billion.
   b. $200 billion.
   c. $800 billion.
   d. $1,000 billion.
   e. $1,200 billion.
21. Which of the following statements is true about a country with a trade deficit?
   a. Net capital outflow must be positive.
   b. Net exports are negative.
   c. Net exports are positive.
   d. Exports exceed imports.
   e. none of the above.

22. Which of the following would have a large income elasticity?
   a. luxuries
   b. necessities
   c. substitutes
   d. complements

23. For two people who are planning to trade, it is impossible to
   a. have a comparative advantage in both goods.
   b. have an absolute advantage in both goods.
   c. specialize in the production of one good.
   d. trade so that both people will be better off.

24. In the production possibilities frontier shown, what is the opportunity cost to society of the
   movement from point A to point C?
   a. 50 baseballs
   b. 100 baseballs
   c. 100 bananas
   d. 300 bananas

25. You produce jewelry boxes. If the demand for jewelry boxes is elastic and you want to
   increase your total revenue, you should
   a. increase the price of your jewelry boxes.
   b. decrease the price of your jewelry boxes.
   c. not change the price of your jewelry boxes.
   d. None of the above answers are correct.

26. If the Fed sells government bonds to the public, bank reserves tend to
   a. increase and the money supply increases.
   b. increase and the money supply decreases.
   c. decrease and the money supply increases.
   d. decrease and the money supply decreases.
27. In a fractional reserve banking system with no excess reserves and no currency holdings, if the central bank buys $100 million of bonds,
   a. reserves and the money supply increase by less than $100 million.
   b. reserves increase by $100 million and the money supply increases by $100 million.
   c. reserves increase by $100 million and the money supply increases by more than $100 million.
   d. both reserves and the money supply increase by more than $100 million.

By taking into account the possibility of consumer substitution, the CPI
   a. understates the cost of living.
   b. overstates the cost of living.
   c. may overstate or understate the cost of living depending on how much prices rise.
   d. doesn’t accurately reflect the cost of living, but it is unclear if it overstates or understates the cost of living.

Use the figure below for questions 29 & 30.

If the money supply is $MS_2$ and the value of money is 2,
   a. the value of money is less than its equilibrium level.
   b. the price level is higher than its equilibrium level.
   c. money demand is greater than the money supply.
   d. the money supply is greater than the money demanded.

30. When the money supply curve shifts from $MS_1$ to $MS_2$,
   a. the demand for goods and services decreases.
   b. the economy’s ability to produce goods and services increases.
   c. the equilibrium price level increases.
   d. the equilibrium value of money increases.

#31 omitted
32. Which of the following would be U.S. foreign direct investment?
   a. A Polish company opens a shipbuilding plant in the United States.
   c. A U.S. bank buys Bolivian corporate bonds.
   d. A U.S. canning factory opens a plant in Ecuador.

33. In recent years, U.S. net capital outflow was
   a. positive and net exports were negative.
   b. positive and net exports were positive.
   c. negative and net exports were negative.
   d. negative and net exports were positive.

34. Extra Credit (2 points) (If not attendance requirement and answered correctly.)

   Please explain what the term “rational expectations” means.

   People base their judgement especially about future inflation, based on what is happening if they see the government cut taxes and increase spending they will expect more inflation.