1. A country produces two goods, text books and crayons. Draw a PPF for this country displaying increasing opportunity costs of production. What explains increasing opportunity costs? Label the following points on your curve.
- Label as Q a point of efficiency. Define efficiency in this setting.
- Label as X a point which is feasible but inefficient.
- Label as Y a point which is unattainable.
- Show a point where the opportunity cost of producing text books is at its lowest. At its highest.
- Show a point where the opportunity cost of producing crayons is at its lowest. At its highest.
Assume there is technical progress only in the production of crayons. Show graphically this change in the PPF. Show the PPF before and after the change.

2. You know the following information about two workers, Mutt and Jeff. Each spends 8 hours a day working in the production of two goods, beach balls, (BB), and potato chips, (PC). The number of units each can produce in one hour is as follows:

<table>
<thead>
<tr>
<th></th>
<th>BB</th>
<th>PC</th>
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</thead>
<tbody>
<tr>
<td>Mutt</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Jeff</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

- Draw a separate production possibility frontier for each worker. Show the value at each intercept.
- Do the PPFs display Increasing Opportunity Costs? Why or why not?
- Who has the absolute advantage in the production of BBs? Who has the absolute advantage in the production of PCs?
- Who has the comparative advantage in the production of BBs? In the production of PCs?
- If Mutt and Jeff decide that both goods should be produced, and each will produce one of the goods, who will produce what? Can both Mutt and Jeff be made better off by specialization and trade? Explain.
- Show a potential consumption bundle for each person if they agree to trade 10 PCs for 4 BBs.

3. List a number of factors that would shift the demand curve for apples. Show one of these changes in a graph. Will a change in the price of apples shift the demand curve for apples? If not, what does change when price changes?

4. List a number of factors that would shift the supply curve for coal. Show one of these changes in a graph. Will a change in the price of coal shift the supply curve for coal? If not, what does change when price changes?

5. Use a correctly labeled graph to show separately the effects the following scenarios will have in the market for airline tickets. Show what happens to the equilibrium price and quantity. Start each problem with an equilibrium price of $400 per ticket and an equilibrium quantity of 10,000 tickets.
   a. Terrorists have increased their threat to bomb U.S. airlines. This threat is taken seriously by many travelers. At the same time the price of airline fuel increases by 30%.
   b. High-speed rail service becomes available in the US.

6. Give an example of a normative economic statement. Give an example of a positive economic statement.

7. What are the three fundamental questions every economy must answer?
8. Use a properly labeled graph to show the market for unskilled labor with an equilibrium wage of $W_0$ and level of employment of $L_0$. Currently there is no government intervention in the market for labor. Legislators have been concerned about the low wages of this group and are thinking about imposing a binding price floor on wages.

a. Assume they impose a binding price floor of $W$ in this market ($W > W_0$). Label employment after this legislation as $L$.

b. What group of workers is clearly made better off by this legislation? Explain.

c. What group of workers is clearly made worse off by this legislation? Explain.

d. In the graph above, shade in an area that describes the deadweight loss of this policy. Explain how you found the deadweight loss.

e. We often discuss the deadweight loss in terms of not allowing all of the gains from trade to take place. Explain.

9. In a properly labeled graph of the market for ice cream start with a market equilibrium at an equilibrium price $P_0$ and quantity $Q_0$.

A. Show the effects of the government imposing a price ceiling in the market for ice cream. Assume this is a binding constraint (price now $< P_0$). Label the quantity of ice cream consumed $I_{C}$. Be sure to identify the area of deadweight loss.

B. Show the effects of the government imposing a price floor in the market for ice cream. Assume this is a binding constraint. Label the quantity of ice cream consumed $I_{C}$. Be sure to identify the area of deadweight loss.

C. For each of the above scenarios, discuss how all of the gains from trade have not been exhausted.

10. For the market of each product below, make a supply-demand graph showing the shift of the curve(s), and indicate what has happened to the four elements of the graph: demand $D$, supply $S$, price $P$, and quantity $Q$ (demanded and supplied, which are equal in equilibrium). Use a (+), (-), (0) for no change, or (?) for indeterminate. Under these symbols, state which determinant of demand or supply (ie, income, tastes, cost of production, etc) has caused each curve to shift.

<table>
<thead>
<tr>
<th>Market</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Gasoline</td>
<td>Crude oil prices rise</td>
</tr>
<tr>
<td></td>
<td>[ D \quad S \quad P \quad Q ]</td>
</tr>
<tr>
<td>b. SUVs</td>
<td>Crude oil prices rise</td>
</tr>
<tr>
<td></td>
<td>[ D \quad S \quad P \quad Q ]</td>
</tr>
</tbody>
</table>
c. Orange juice

Hurricane injures Florida oranges

D  S  P  Q

d. Apple juice

Hurricane injures Florida oranges

D  S  P  Q

e. Expensive California wine

Fire in wine-producing Sonoma county destroys vines, and tax cut increases household incomes

P  Q  D  S

f. Cell phones

New technology makes cells phones very cheap, but laws are passed making it illegal to use them while driving a car.

D  S  P  Q
f. beef in America  
Mad cow disease discovered in Canadian cows makes consumers afraid of beef, and imports from Canada are banned.

D S P Q

11. Adam Smith argued that self-interest guides an economy, like an “invisible hand,” toward efficient allocations of resources. However, we discussed several reasons why the government might need to intervene.
- List two of those reasons. Explain why intervention is needed for efficiency.
- Other than efficiency, what else is a focus of policy makers?

12. The company you manage decided to develop a new product. At this point, your firm has already invested $5 million in the development of this product, but more funds are needed before the product can be released. A new report (which you believe to be factual) has estimated revenue of this new product to only total $4 million.

Discuss the merits of the following statement. “We should continue production, because if we do not, we have wasted our $5 million.”

Explain carefully what should be considered when deciding whether to continue investing in this project.
13. You have been hired as a consultant by the Whataburger Corporation. They give you the following information and want you to help them with some pricing decisions.
- They determined that the price elasticity of demand for Whataburgers is 0.45. Your boss asks you to give her an estimate of the change in the number of burgers they will sell if they increase their price by 20%. What will you tell her? Be as specific as possible.
- Your boss also wants to know if this increase in price will lead to an increase, decrease or no change in revenue. What will you tell her? Be as specific as possible. Briefly explain.
- You find that when the price of onion rings goes up 20% the number of Whataburgers sold decreases by 40%. Using this information, what elasticity can you determine? Determine that elasticity. Show your work for full credit. What does this tell you about the relationship between onion rings and Whataburgers? Briefly explain.
- Last year the income in Georgetown increased by 15% and the number of Whataburgers sold fell by 45%. Using this information, what elasticity can you determine? Determine that elasticity. Show your work for full credit. What does this tell you about Whataburgers? Briefly explain.

14. During the second Gulf War the supply of oil was reduced. Before the war, the price of oil was $20 per barrel and 10,000 barrels were traded on the world market. During the war the price was $50 and only 4,000 barrels were traded.
- Given the above, you can determine either the price elasticity of supply or the price elasticity of demand. Which elasticity can you determine? [A graph might help.]

15. The government is thinking of placing a per unit tax on either the production of insulin or Pizza Hut Pizzas. The producers of insulin do not seem very worried about this possible tax. While the producers of Pizza Hut Pizza seem very concerned. Explain why this would be true using graphs of the market for insulin and the market for Pizza Hut Pizzas.

16. Consider the market for video tape rentals (V). Show this market graphically. Label both axes and the two lines. Label the equilibrium price and quantity, \( P_0 \) and \( Q_0 \), respectively. Assume \( P_0 = 4.50 \).
A. The government has decided to tax the consumption of this good. They place a per unit tax of $2 per video rented. Show the effects of this tax on the market for video tape rentals. Label the new equilibrium quantity \( Q_1 \). Label the price to consumers, \( P_C \), and the price to producers, \( P_P \).
B. Is there any revenue generated from this tax? If yes, label the corners of the area describing the revenue from the tax \((a,b,c,d)\).
C. Are consumers hurt by this tax? If yes, label the corners of the area describing the loss in consumer surplus \((j,k,l,m)\).
D. Are producers hurt by this tax? If yes, label the corners of the area describing the loss in producer surplus \((w,x,y,z)\).
E. Is there a deadweight loss from this tax? If yes, shade in an area that shows the deadweight loss from this tax.