Question 1-5: Worth 10 points each for a total of 40 points. ONLY ANSWER 4! If you answer 5 and do not identify which one you would like me to grade, I will grade the first 4.

1. The prairie dog has always been considered a problem for American cattle ranchers. They dig holes that cattle and horses can step in and they eat grass necessary for cattle. Recently, ranchers have discovered that there is a demand for prairie dogs as pets. In some areas prairie dogs can sell for as high as $150. Draw a production possibilities frontier showing a rancher’s production option between cattle production and prairie dog production showing increasing opportunity cost and show what would happen in each of the following situations (You should have a total of 3 graphs to explain the following problems.)

   a. In your first graph: The outcome is efficient, with ranchers choosing to produce equal numbers of cattle and prairie dogs. Label this situation A.

   b. Using the first graph: As a protest against the government introducing the gray wolf back into the wild in their state, ranchers decide not to use 25% of the available grassland for grazing. Label this situation B.

   c. Using the same graph as above: The price of prairie dogs increases to $200 each, so ranchers decide to allot additional land for prairie dogs. Label this situation C. in reference to Label A.

   d. In your second graph: The government grants new leases to ranchers, giving them 10,000 new acres of grassland in reference to point (a). Label A.

   e. In your third graph: A drought destroys most of the available grass for grazing of cattle, but not prairie dogs since they also eat plant roots.

\[ (a, b, c) \]

\[ A = \text{should be half prairie dogs} \]
\[ \text{half cattle} \]

\[ \text{per B'} = \text{Either of these answers} \]
\[ \text{is fine as long as the labels (B or B') demonstrate an inefficiency.} \]

\[ (a') \]

\[ \text{cattle} \]

\[ (c') \]

\[ \text{prairie dogs} \]
2. Suppose a worker in Germany can produce 15 computers or 5 tons of grain per month. Suppose a worker in Poland can produce 4 computers or 4 tons of grain per month. For simplicity, assume, for now, that each country has only one worker and the production possibility frontiers are linear.

a. Graph the production possibilities frontier for the German and Polish worker.

b. What is the opportunity cost of a computer in both countries? What is the opportunity cost of a ton of grain in both countries?

c. Explain which country has the absolute advantage and comparative advantage (Simply saying that the German or Polish worker has the absolute advantage or comparative advantage will not suffice, explain why you selected the German worker or the Polish worker).

d. Each country should tend toward specialization in the production of which good? Explain.

e. How would your analysis change if you assumed that each country had 10 million workers?

(c) Will not change analysis... only magnitude or level change.

(b.)

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<th>Comp.</th>
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<tr>
<td>German</td>
<td>15 comp/month</td>
<td>5 tons/month</td>
</tr>
<tr>
<td>Polish</td>
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Opp costs

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<tr>
<th></th>
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<tr>
<td>Polish</td>
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(b,c,d) Who is losing the least? Computers for Germany Grain for Poland.

Germany should specialize in computers & Poland Grain.
3. Are the following statements true or false? Also, explain why the statements are true or false.
a. "Certain very talented people have a comparative advantage in everything they do."
b. "Markets are always a good way to organize economic activity?"
c. "Required textbooks have more elastic demand than mystery novels."
d. "The burden of a tax is divided between buyers and sellers depending on the elasticity of demand and supply." (Hint: Use a graph to explain why this is true or not true.)

a.) False. - No one can have a comparative adv. in everything. If you have a comp. adv. in one thing, you must have a comp. adv. in the another.

b.) False - Markets are usually a good way to organize economic activity. However, because of externalities & prop. rights, government may need to intervene. (must failure...)

c.) False - Mystery novels have more elasticity than required texts, because mystery novels have close substitutes, while required texts have no substitutes.

d.) True - [Graph showing supply and demand with a curve for price buyers pay and price sellers receive with a burden depending on elasticity...].
4. a. Using the graph, analyze the effect a $300 price floor would have on the market for ten-speed bicycles. What is the quantity sold? Would this be a binding price floor? Surplus, shortage, or nothing? If a surplus or shortage exists, how much is the shortage or surplus?

b. Using the graph shown, analyze the effect a $700 price floor would have on this market. What is the quantity sold? Would this be a binding price floor? Surplus, shortage, or nothing? If surplus or shortage exists, how much is the shortage of surplus?

c. What is the purpose of policymakers to impose a price ceiling or price floor?

(a) price floor: Quantity sold 5,000, non-binding, price floor, no surplus or shortage.

(b) price floor (min price): at $700, $Q_s = 7,000$

$Q_p = 3,000$ Quantity sold 3,000 creating

a surplus of 4,000 (7,000 - 3,000). Binding price floor

(c) More than one reason may exist for policymakers to impose a price ceiling or price floor in a market. Often this is done in an attempt to increase equity or protectionism.
5. Congress and the president decide that the United States should reduce air pollution by reducing its use of gasoline. They impose a $1 tax for each gallon of gasoline sold.
   a. Should they impose this tax on producers or consumers? Explain carefully using a supply-demand diagram (Hint: Assume 45° angle for each of the curves). Be sure to identify the price paid by consumers and price received by sellers.
   b. If the demand for gasoline were elastic, would this tax be more effective or less effective in reducing the quantity of gasoline consumed? Explain with words and a graph.
   c. If the demand for gasoline were inelastic, would this tax be more effective or less effective in reducing the quantity of gasoline consumed? Explain with words and a graph.
   d. Who bears the tax burden in part b (buyers, sellers, neither, or both) and who bears the tax burden in part c (buyers, sellers, neither, or both)? Explain...

Doesn't matter since producers 2 consumers share the burden in an environment of equal elasticities.

Tax would be more effective than in part (a). As you can see, quantity has a greater decrease than part (a).

Tax would be less effective than part (a). As you can see, quantity has a smaller decrease than part (a).