For Problems 1-3, please show the shift or shifts in supply and demand in the graphs below. LABEL ALL CURVES. Indicate in the blank spaces provided to the left of the graphs what will happen to supply, demand, price and quantity. (8 points each).

1. Horses eat something called horse feed. Many people raise horses to sell and make money. Please describe what has happened in the market for horses when the price of horse feed rose. (fyi, this actually happened.)

   Supply ↓         Price ↑
   Demand ↓        Quantity ↓

2. Many college students enjoy a late night snack of either chicken wings or pizza. Show what would happen in the market for chicken wings if the price of pizza went down.

   Supply ↓         Price ↓
   Demand ↓        Quantity ↓

3. Boxed macaroni and cheese mix is considered an inferior good. Please show what happens in the market for boxed macaroni and cheese when income falls.

   Supply ↑         Price ↑
   Demand ↑        Quantity ↑
4. (20 points) Let us suppose we look at two products; cosas and cachivaches. We find the following information

<table>
<thead>
<tr>
<th>Price of Cosas</th>
<th>Quantity of Cosas</th>
<th>Quantity of Cachivaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>100</td>
<td>120</td>
<td>50</td>
</tr>
</tbody>
</table>

a. Using either of the two methods presented, please calculate the elasticity of demand for Cosas.

\[
\frac{\Delta Q}{Q_0} \times \frac{1}{\frac{\Delta P}{P_0}} = \frac{\frac{60}{60}}{\frac{120}{100}} = \frac{1}{\frac{2}{1}} = 0.5
\]

b. Is the demand for Cosas elastic (responsive), inelastic (non-responsive) or unitary? Explain how you can tell.

Elastic (Responsive) \( \varepsilon (\text{Elast.}) > 1 \)

(c) In the book and in class we discussed characteristics that make the elasticity of demand for a good elastic (responsive) rather than inelastic (non-responsive.) Cite and briefly explain two such characteristics that make the demand good elastic (responsive). Demand will be elastic

- Longer time period. More time to adjust
- More substitutes. Can adjust to higher price by buying substitute
- Luxury - If price rises, can do without
- More narrow class of market. Cosas is substitute for all soft drinks taken together

(d) Please calculate the cross-elasticity (responsiveness) of demand for Cachivaches with respect to Cosas.

\[
\frac{\Delta Q_{\text{cach}}}{Q_{\text{cach},0}} \times \frac{1}{\frac{\Delta P_{\text{cas}}}{P_{\text{cas},0}}} = \frac{\frac{40}{60}}{\frac{-40}{120}} = \frac{2}{-2} = -1
\]

e. Are the two goods substitutes or complements? How can you tell?

Complements \( \varepsilon (\text{Cross}) < 0 \)
5. (14 points) Would it help to do the practice problems in Aplia? Let's see. Fritz and Reva are both farmers. The table below shows the amount of alfalfa and beef each farmer can produce in a day. Both can spend their time producing alfalfa, beef, or some combination of the two.

<table>
<thead>
<tr>
<th></th>
<th>Alfalfa (Pounds per day)</th>
<th>Beef (Pounds per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fritz</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Reva</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

a. Graph Fritz’s production possibilities frontier (PPF) for a given day.

b. What is Fritz’s opportunity cost of producing alfalfa?

\[
\frac{\text{Give}}{\text{Get}} = \frac{5}{15} = \frac{1}{3}
\]

c. What is Fritz’s opportunity cost of producing beef?

\[
\frac{\text{Give}}{\text{Get}} = \frac{15}{6} = 2.5
\]

d. What is Reva’s opportunity cost of producing alfalfa?

\[
\frac{\text{Give}}{\text{Get}} = \frac{5}{10} = 0.5
\]

e. What is Reva’s opportunity cost of producing beef?

\[
\frac{\text{Give}}{\text{Get}} = \frac{10}{6} = 1.67
\]

f. Who has a comparative advantage in producing alfalfa?

Fritz

(g) Who has a comparative advantage in producing beef?

Reva

h. What should each one produce?

Fritz: Alfalfa

Reva: Beef

produce, what, some, all
6. (14 points) Let us suppose we look at the market for gasoline.

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6. (14 points) Let us suppose we look at the market for gasoline.

a) If we placed a price ceiling of one dollar on gasoline, how much would firms wish to sell?

b) If we placed a price ceiling of one dollar on gasoline, how much would actually be sold?

c) We stated in class three things occur when a price ceiling is placed on a product. Cite and briefly explain each in the context of this example.

- If gasoline was only $1, then people would be limited to only a certain amount. 
- Shortage. Some people would be willing to pay a higher price of $3, but would not be able to get it.
- Black market. Firms might sell some at a higher price. This would be illegal, but might be

d) If the price ceiling was 50¢, what would be the equilibrium quantity purchased? 

e) Does a decline in the price ceiling cause the supply curve to shift? Explain

NO. Just on a different point on the supply curve.
Multiple Choice. 2 points each.

7. The term which means whatever must be given up to obtain an item is
   a. efficiency.
   b. externality.
   c. opportunity cost.
   d. market failure.

8. The United States can benefit from trade
   a. with any nation.
   b. only with nations which can produce goods the U.S. cannot produce.
   c. with any nation not in economic competition with the U.S.
   d. only with less-developed nations.

9. Daniel decides to spend an hour playing basketball rather than working at $6 per hour. His tradeoff is
   a. nothing, because he enjoys playing basketball more than working.
   b. the increase in skill he obtains from playing basketball for that hour.
   c. the $6 he could have earned.
   d. nothing, because he spent $6 for admission into the sports complex to play basketball.

10. In the circular-flow diagram,
    a. spending on goods and services flow from firms to households.
    b. goods and services flow from households to firms.
    c. factors of production flow from firms to households.
    d. income from factors of production flows from firms to households.

11. On the production possibilities frontier shown, the opportunity cost to the economy of getting 10 additional roller blades by moving from point A to point B is
    a. 15 bikes.
    b. 10 bikes.
    c. 5 bikes.
    d. It is impossible to know the opportunity cost without knowing the cost of the resources used to produce the additional roller blades.
12. If a good is “normal,” then an increase in income will result in
   a. no change in the demand for the good.
   b. a decrease in the demand for the good.
   c. an increase in the demand for the good.
   d. a lower market price.

13. Sally tells you that she thinks the price of her favorite stationery will increase in the near future. She will probably respond by
   a. decreasing her current demand for the stationery.
   b. increasing her current demand for the stationery.
   c. not changing her demand for stationery currently.
   d. currently refusing to buy anymore stationery.

14. The movement from point A to point B on the graph would be caused by
   a. an increase in the price of the good.
   b. a decrease in the price of the good.
   c. an increase in technology.
   d. an increase in input prices.

15. The movement from point A to point B on the graph is called
   a. a decrease in supply.
   b. an increase in supply.
   c. a decrease in the quantity supplied.
   d. an increase in the quantity supplied.
16. Assume that a 4 percent increase in income results in a 2 percent increase in the quantity demanded of a good. The income elasticity of demand for the good is
   a. negative and therefore the good is an inferior good.
   b. negative and therefore the good is a normal good.
   c. positive and therefore the good is an inferior good.
   d. positive and therefore the good is a normal good.

\[
\frac{\partial Q}{\partial I} = \frac{1}{2} \Rightarrow \frac{\partial Q}{\partial I} = \frac{1}{2} 
\]

17. Suppose the price elasticity of demand for basketballs is 1.20. A 15 percent increase in price will result in
   a. an 18 percent decrease in the quantity of basketballs demanded.
   b. a 15 percent decrease in the quantity of basketballs demanded.
   c. an 8 percent reduction in the number of basketballs demanded.
   d. a 12.5 percent reduction in the number of basketballs demanded.

\[
\frac{\partial Q}{\partial P} = 1.20 
\]

18. Rent control is
   a. a common example of a social problem solved by government regulation.
   b. a common example of a price ceiling.
   c. the most effective way to provide affordable housing.
   d. the most efficient way to allocate housing.

19. A price floor is not binding if
   a. the price floor is higher than the equilibrium market price.
   b. the price floor is lower than the equilibrium market price.
   c. people are willing to buy as much when the price floor is imposed as the did before.
   d. the government sets it.

20. If the minimum wage is above the equilibrium wage,
   a. the quantity demanded of labor will be greater than the quantity supplied.
   b. the quantity demanded of labor will equal the quantity supplied.
   c. the quantity demanded of labor will be less than the quantity supplied.
   d. anyone who wants a job at the minimum wage can find one.

Extra credit. If no more than one absence and if answered correctly – two points.

An increase in the minimum wage might not be an effective way to reduce poverty. Cite one reason why from lecture.

- Not many people work at min wage
- Some (majority) at or near min wage are not poor. (His daughter working at min wage
- Some may lose their job if min wage increase