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)

Label the curves and axes and show any shifts.
1. Suppose consumers use either sugar or honey as a sweetener. What will happen in the market for honey if the price of sugar rises?

Supply \( n = \Delta \) 
Price \( \uparrow \)
Demand \( \downarrow \) 
Quantity \( \uparrow \)

\( \rho_{sugar} \uparrow \) so \( D_{honey} \downarrow \)

2. Cattle in the United States are frequently fed corn. In the last year, the price of corn has fallen by about 12%. What impact did this have in the market for beef?

Supply \( \uparrow \) 
Price \( \downarrow \)
Demand \( n = \Delta \) 
Quantity \( \uparrow \)

Input \( \downarrow \) so \( S \downarrow \)

3. Automobiles require a large number of welds to hold the car together. In recent years robots have been improved to the point where they can weld much more quickly and accurately than humans. Show the impact of this improvement on the market for automobiles.

Supply \( \uparrow \) 
Price \( \downarrow \)
Demand \( n = \Delta \) 
Quantity \( \uparrow \)

Tech. improv. \( S \uparrow \)
4. In honor of Jug week, how about a horse problem. Let us look at the market for horseshoes. The demand in Delaware County is given below.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2</td>
<td>400</td>
</tr>
<tr>
<td>$3</td>
<td>350</td>
</tr>
</tbody>
</table>

a. Suppose the current price of horseshoes is $2. Please calculate the elasticity (responsiveness) of demand when the price rises to $3.

\[
\frac{\Delta Q}{\Delta P} = \frac{400}{2} = 200
\]

\[
\frac{\Delta P}{\Delta Q} = \frac{400}{2} = 200
\]

\[
\text{elasticity} = \frac{\Delta Q}{\Delta P} \times \frac{\Delta P}{\Delta Q} = \frac{200 \times 200}{1} = 400
\]

b. Is the demand elastic (responsive) or inelastic (non-responsive). How can you tell?

Inelastic, \( 5 < 1 \)

c. Cite two factors that affect elasticity/responsiveness. Use one to explain why your answer in part b) would be consistent with what we would expect to find in the market for horseshoes.

- Small share of budget (small cost of owning a horse)
- No good substitutes (they can’t wear flip-flops)
- Necessity (well for the horse)
- Time period (not a factor here)

way mht is defined.

d. What is the total revenue of horseshoe firms at each price?

- At $2, \( 2 \times 400 = 800 \)
- At $3, \( 3 \times 350 = 1050 \)

e. Suppose that people’s income rose by 50% in Delaware County and that as a result they wanted to buy 360 horseshoes at a price of $2. Please calculate the income elasticity.

\[
\frac{\Delta Q}{\Delta I} = \frac{360 - 400}{0.5 \times 400} = -0.2
\]

\[
\frac{\Delta I}{\Delta Q} = \frac{0.5 \times 400}{360 - 400} = -0.2
\]

f. Are horseshoes an inferior good? How can you tell?

Yes, \( \text{inc elast} < 0 \)
5. (12 points) Use the following supply and demand schedules for bicycles to answer the questions below.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity demanded</th>
<th>Quantity supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>$300</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td>$400</td>
<td>55</td>
<td>40</td>
</tr>
<tr>
<td>$500</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>$600</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>$700</td>
<td>40</td>
<td>70</td>
</tr>
<tr>
<td>$800</td>
<td>35</td>
<td>80</td>
</tr>
</tbody>
</table>

a. Use the information provided above to plot the supply and demand curves for bicycles.

b. In response to lobbying by the Bicycle Riders Association, Congress places a price ceiling of $400 on bicycles. Use the information provided above to plot the supply and demand curves for bicycles. Impose the price ceiling. What is the result of a price ceiling of $400 on bicycles?

c. Does a price ceiling of $400 bicycles make all bicycles buyers better off? Why or why not? What are the three things that might happen when price ceilings occur?
6. (9 points) The following information shows the costs incurred by Peter Painter when he paints apartments. Because painting is backbreaking work, the more he paints, the higher the costs he incurs in both pain and chiropractic bills.

| Cost of painting first apartment house | $1,000 |
| Cost of painting second apartment house | $2,000 |
| Cost of painting third apartment house | $3,000 |
| Cost of painting fourth apartment house | $4,000 |
| Cost of painting fifth apartment house | $5,000 |

(a) Plot Peter Painter’s cost on the graph above.

(b) If the price of painting apartment houses is $2000 each, how many will he paint?

\[ \text{Cost} \leq \text{Benefit (Revenue)} \quad \text{for} \quad 2 \]

(c) What is the value of his producer surplus? Either show it on the graph or calculate it.

\[ \text{Producer surplus on first} \quad \$2,000 - \$1,000 = \$1,000 \]
\[ \text{Producer surplus on second} \quad \$2,000 - \$0 = \$2,000 \]
\[ \text{So} \quad \$1,000 + \$2,000 = \$3,000 \]

See shaded area.
7. (9 points) The following table describes the production possibilities of two cities in the country of Baseballia:

<table>
<thead>
<tr>
<th></th>
<th>Pairs of Red Socks per Worker per hour</th>
<th>Pairs of White Socks per Worker per Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Chicago</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

a. Without trade, what is the opportunity cost of white socks (in terms of red socks) in Boston? What is the opportunity cost in Chicago?

\[
\text{Boston: } \frac{\text{Give 3}}{\text{Get 3}} = 1 \\
\text{Chicago: } \frac{\text{Give 2}}{\text{Get 1}} = \frac{2}{1} = 2
\]

b. Which city has an absolute advantage in the production of each color sock? Which city has a comparative advantage in the production of each color sock?

- Boston is better at producing red. Abs adv.
- Boston has comp adv in white.
- Chicago has comp adv in red.
- Chicago will export red.
- Boston has comp adv in white socks.
- Boston will export white.
Multiple Choice.

*8. Suppose you find $20. If you choose to use the $20 to go to the football game, your opportunity cost of going to the game is
   a. nothing, because you found the money.
   b. $20 (because you could have used the $20 to buy other things).
   c. $20 (because you could have used the $20 to buy other things) plus the value of your time spent at the game.
   d. $20 (because you could have used the $20 to buy other things) plus the value of your time spent at the game, plus the cost of the dinner you purchased at the game.
   e. none of the above.

Use the following diagram to answer questions 9 and 10.

*9. If the economy is operating at point C, the opportunity cost of producing an additional 15 units of bacon is
   a. 10 units of eggs.
   b. 20 units of eggs.
   c. 30 units of eggs.
   d. 40 units of eggs.
   e. 50 units of eggs.

*10. As we move from point A to point D,
   a. the opportunity cost of eggs in terms of bacon is constant.
   b. the opportunity cost of eggs in terms of bacon falls.
   c. the opportunity cost of eggs in terms of bacon rises.
   d. the economy becomes more efficient.
   e. the economy becomes less efficient.
*11. According to the principle of comparative advantage,
a. countries with a comparative advantage in the production of every good need not specialize.
b. countries should specialize in the production of goods that they enjoy consuming.
c. countries should specialize in the production of goods for which they use fewer resources in production than their trading partners.
d. **countries should specialize in the production of goods for which they have a lower opportunity cost of production than their trading partners.**

*12. Suppose there is an increase in both the supply and demand for personal computers. In the market for personal computers, we would expect
a. the equilibrium quantity to rise and the equilibrium price to rise.
b. the equilibrium quantity to rise and the equilibrium price to fall.
c. the equilibrium quantity to rise and the equilibrium price to remain constant.
d. the equilibrium quantity to rise and the change in the equilibrium price to be ambiguous.
e. the change in the equilibrium quantity to be ambiguous and the equilibrium price to rise.

*13. In general, a flatter demand curve is more likely to be
a. price elastic.
b. price inelastic.
c. unit price elastic.
d. none of the above.

*14. If a buyer's willingness to pay for a new Honda is $20,000 and she is able to actually buy it for $18,000, her consumer surplus is
a. $0.
b. $2,000.
c. $18,000.
d. $20,000.
e. $38,000.

15. The two loops in the circular-flow diagram represent
a. the flow of goods and the flow of services.
b. the flow of goods and services and the flow of dollars.
c. the flow of dollars and the flow of financial assets.
d. the flow of capital goods and the flow of consumer goods.

16. A country’s consumption possibilities frontier can be outside its production possibilities frontier
a. with trade.
b. by allocating resources differently.
c. by producing a greater variety of goods and services.
d. by lowering unemployment in the country.
17. If, at the current price, there is a shortage of a good, 
   a. the price is below the equilibrium price.
   b. the market can be in equilibrium.
   c. sellers are producing more than buyers wish to buy.
   d. All of the above answers are correct.

18. If the cross-price elasticity of demand is 1.25, then the two goods would be
   a. complements.
   b. luxuries.
   c. normal goods.
   d. substitutes.

19. Under rent control, landlords cease to be responsive to tenants’ concerns about the quality of
   the housing because
   a. with shortages and waiting lists, they have no incentive to maintain and improve their
      property.
   b. they know they can never please their tenants.
   c. the law no longer requires them to maintain their buildings.
   d. that is the government’s responsibility.
Katrina drives up building costs, but rise seen as temporary

By Allison Linn / AP Business Writer

SEATTLE -- Hurrican Katrina destroyed thousands of homes, but it was the damage to timber and sawmills in the storm-ravaged region that immediately drove up the price of some construction materials nationwide.

"In terms of somebody buying a house in California, there's going to be some ripple effect, but it's not going to be overwhelming," said Michael Carliner, an economist with the National Association of Home Builders.

The devastation Katrina wrought on homes alone is thought to be far worse than that of Hurricane Andrew in 1992, with perhaps hundreds of thousands of homes damaged or destroyed.

Please show the shifts in supply and/or demand in the market for lumber graph to the right. Indicate in the space provided what will happen to supply, demand, price and quantity. Label the axes and show the shifts.