



2) Match the outcome to the policy that could generate it and **illustrate the impact on a supply and demand curve**. Label all curves, axes, and points.

**Policy:**

*Price floor.*

*Price ceiling.*

*A specific tax on producers.*

*Regulation makes production more costly*

**Outcome**

Government purchase of surplus to maintain price.

**Policy**

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Price paid by consumers is greater than the price received by suppliers

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Consumers wait in lines to obtain the good (due to non-market rationing)

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Equilibrium price paid by consumers increases and quantity sold decreases

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- 3) If  $p_1 = 10$ ,  $p_2=20$ , and  $Y=300$
- a. Draw the budget constraint.

- b. Show how you can derive the price consumption curve for a given consumer's preferences (drawn as you like so long as they obey the properties of indifference curves discussed in class) using:  $p_1 = 5$  all else constant, the  $p_1 = 10$  line you drew for (a), and  $p_1 = 20$  all else constant.

- c. Show how to derive the individual's demand curve from the graph in (b).

4) The demand curve is given to you as  $Q=90-14*p$ .

a. Fill out the following table (use the relatively higher price / relatively lower quantity pair in the elasticity calculation).

Price	Quantity	Elasticity
\$1.00		-----
\$2.00		
\$3.00		
\$4.00		
\$5.00		

b. Draw this demand curve with price on the y-axis and quantity on the x-axis. Identify the range over which the demand curve is inelastic and over which it is elastic.

5) You are given that  $p=80-4*q$  is the inverse demand curve and  $p=20+6*q$  is the inverse supply curve.

a. What is the equilibrium price quantity pair if the market is perfectly competitive?

b. Illustrate the effect of a price ceiling set at \$44 on the graph.

c. Describe the outcome of this policy in terms of quantity supplied and quantity demanded. If there is excess supply or excess demand, describe the size of it in terms of the quantity of the shortage or surplus (calculate numbers here).

- 6) I know the price of shrimp is \$6.00 per unit and the price of French fries is \$1.00 per unit, the marginal utility of shrimp at a bundle the consumer is considering buying is 9 and the marginal utility of French fries is 2. I also know this bundle is on the budget line.
- a. Explain why the bundle the consumer is considering buying is not the optimal bundle.
  
  - b. Is the optimal bundle going to be composed of more shrimp and less French fries or more French fries and less shrimp than the bundle under consideration? Why?
  
  - c. Show on graph that illustrates sample indifference curves and a budget constraint where the consumption bundle described in the introduction to this problem lies in relation to the optimal bundle.

7) A student has a stipend that pays her \$1,500 per month and she spends it on two goods: food and education. The price of one unit of education per month is \$200. The price of one unit of food per month is \$15. She just got an additional award that will give her \$100 more per month, but this additional money can only be used on education.

a. Illustrate her original budget line and her budget line after she receives the award.

b. Illustrate using indifference curves how she could be made even better off if the grant had been given in cash and unconstrained in how she uses it compared to having it constrained to be spent only on education (a person for **whom it does matter**.)

8) Compared to last year, the quantity purchased of bacon has dropped. The United States Department of Agriculture (USDA) argues that there has been a pig disease that has reduced the supply of hogs that can be used to make bacon thus making this input to bacon more costly, and that explains why purchase levels have dropped. The American Heart Association (AHA) argues that the ad campaigns they have been running stressing the negative health effects of bacon explain the decrease in purchases.

a. Graph USDA's argument on a supply and demand graph for bacon.

b. Graph AHA's argument on a supply and demand graph for bacon.

a. Which explanation is more consistent with the facts if the price of bacon increased 25% over the past year? Justify your answer.



9) Circle whether the statement is true or false:

a. A change in consumer income causes a shift in the supply curve.

TRUE      FALSE

b. The Marginal Rate of Transformation changes if one price changes while income and the other price are held constant.

TRUE      FALSE

c. A good for which the price elasticity of supply is elastic has a larger percent change in quantity than the corresponding percent change in price.

TRUE      FALSE

d. Different bundles on an indifference curve generate the same amount of utility for the consumer.

TRUE      FALSE

e. In a two good world, both goods must be normal to avoid violating the “more is better than less” assumption about preferences.

TRUE      FALSE

f. The cross price elasticity for a substitute is positive.

TRUE      FALSE

g. A negative income elasticity means the total effect is less than the substitution effect in response to a change in the price of the good all else constant.

TRUE      FALSE

h. In a corner solution of a two commodity world, the consumer consumes zero amount of one of the commodities and allocates all of their income to the other commodity.

TRUE      FALSE

10) The zoo is considering raising the price of an annual family membership from \$72 to \$79. If the number of annual family memberships sold is 20,000 and the best available information suggests that the price elasticity of demand for annual family memberships is -0.6, answer the following questions.

a. What is the predicted membership level after the price is raised?

b. Compare total revenue from annual family memberships at a price of \$72 with total revenue at a price of \$79 given your answer to (a). Which price leads to higher total revenue?

c. A board member points out that the elasticity they are using is a short run price elasticity of demand. In the long run, people will become more price responsive. Estimates the board member brings to the table indicate the long run price elasticity of demand is -1.5. What will be the long run membership level and total revenue if the price is raised to \$79?