

Question 1:

An economy can produce two goods, X and Y. Some values of the production possibilities frontier (PPF) for this economy are given by the following table,

X	0	4	7	9	10.5	11.5	13	14	15	16
Y	18	17	16	15	14	13	11	9	6	0

You should begin by graphing the production possibilities frontier (although you will not be turning in this graph for grading). Your graph should show clearly the frontier, the attainable region, and the unattainable region.

a) At $X=4$, $X=9$, $X=13$ and $X=14$, compute the amount of y that has to be given up to produce one more unit of X . This is called the _____ cost of X .

b) At $Y=9$, $Y=13$, $Y=15$ and $Y=17$, compute the amount of X that has to be given up to produce one more unit of Y . This is called the _____ cost of Y .

c) Using what you have learned in parts a and b, complete the following sentence: "In general, when a society produces more of a commodity, the cost of an additional unit of the commodity _____ (rises)(falls) with each additional unit produced."

d) Classify the following points in one of the following three alternatives:

- I. attainable but inefficient
- II. attainable and efficient
- III. unattainable

$X=7, Y=16$; $X=3, Y=17$; $X=12, Y=14$; $X=16, Y=6$; $X=13, Y=11$.

e) Suppose that in the above case, X represents education and y represents other commodities produced in the public sector. Mike Harris argues that if we used our school budget properly, we could get better education and cut property taxes at the same time; the teachers in contrast argue that they are doing everything they could be reasonably expected to do, and that in fact we need to devote more resources to education to achieve a decent society in the long run. Which of the following statements would best relate each position to the production possibilities frontier?:

- I. We are currently producing at an inefficient point inside the PPF.
- II. We are currently producing at an unattainable point outside the PPF.
- III. We are currently producing at an efficient point on the PPF and should stay where we are.
- IV. We are currently producing at an efficient point on the PPF but should move to another point on the PPF with more of x .
- V. We are currently producing at an efficient point on the PPF but should move to another point on the PPF with more of v .

Question II:

A small town, about to have a picnic, finds itself with no frisbees in the stores and no time to travel to buy more. The mayor of town offers to buy frisbees from people in a neighboring town who own them. The following two equations represent the values ascribed to frisbees by potential buyers and sellers (and hence represent the demand and supply curves):

$$\text{Buyers: } P = 10 - 0.1 Q$$

$$\text{Sellers: } P = 0.4 Q$$

where p equals price in dollars and Q equals quantity. You should begin this problem by graphing supply and demand (although again you will not be turning in your diagram for grading). Fill in the following table, first for buyers, and then for sellers, to help yourself on this graph:

P	0	1	2	3	4	5	6	7	8	9	10
Q											

- Determine equilibrium price and quantity in this market.
- Suppose that the price were set \$1.00 above equilibrium. Would there be excess demand or excess supply, and how much? Would this cause the price to move towards or away from equilibrium?
- Suppose that the price were set \$1.00 below equilibrium? Would there be excess demand or excess supply, and how much? Would this cause the price to move towards or away from equilibrium?
- Determine the elasticities of demand and supply at the equilibrium price.
- Economists believe that the market in this case "works" in allocating frisbees. An alternative method of allocating frisbees would be one in which all frisbees were confiscated by the town (assume for the moment that the town could do such a thing!) and allocated on picnic day on a first-come first-served basis. Provide a one line argument for why the market would be superior. Provide a one line argument defending the first-come first-served method.

Question III:

The market for pizzas is presently in equilibrium, and its supply and demand schedules have the usual shape. Submarine sandwiches ("subs") are a substitute for pizza. Pepperoni is an input into the production of pizzas, while lettuce is an input into the production of subs. Beer and pizzas are complementary goods. You will find it useful to draw supply and demand diagrams to analyze the effect of each of the following individual events on the equilibrium price and quantity in the pizza market (as usual, you will not be turning in these diagrams). Each case should be considered independently. In each case, you should indicate on your answer sheet what happens to the supply curve, to the demand curve, and to equilibrium price and quantity, using the following codes:

For both supply and demand, the codes are -

- A -shifts to the right
- B -shifts to the left
- C -does not shift
- D -may or may not shift, and direction is ambiguous

For both price and quantity, the codes are -

- E -rises
- F -falls
- G -remains the same
- H -may rise or fall

- a) A Canadian scores the winning goal in the Stanley Cup and reveals that he owes his success entirely to eating pizza 7 days a week. Canadians become convinced that pizza eating can make them all healthy. A poll finds that 81% of Canadians believe pizza-eaters are more attractive than sub-eaters.
- b) Consumers' real incomes fall (pizzas are normal goods).
- c) Pepperoni falls in price.
- d) Beer rises in price at the same time as Canadians' real incomes rise.
- e) Lettuce rises in price.
- f) The pizza dough workers win a large wage increase. At the same time, wages in the submarine industry rise.