

1. What happens to the price and quantity of pez dispensers if the income of consumers falls when
 - a. pez dispensers are a normal good
 - b. pez dispensers are an inferior goods
 - a. For a normal good, a fall in consumer incomes causes a decrease in Demand (Demand shifts to the left). This leads to a lower price and lower quantity.
 - b. For an inferior good, a fall in consumer incomes causes an increase in Demand (Demand shifts to the right). This leads to a higher price and higher quantity.

2. Polyester is an input to the production of polyester ties. What happens to the price and quantity of the polyester ties if
 - a. the price of polyester falls
 - b. the price of polyester rises
 - a. a decline in the price of an input reduces the marginal cost of producing each unit (a downward shift in the MC curve). This, in turn, is called an increase in supply (because at each price, there is a larger quantity supplied). Supply shifts to the right. The increase in supply results in a lower price and a higher quantity in equilibrium.
 - b. An increase in the price of an input increases the marginal cost of producing each unit (an upward shift in the MC curve). This in turn, is called a decrease in supply (because at each price, there is a smaller quantity supplied). Supply shifts to the left. The decrease in supply results in a higher price and lower quantity in equilibrium.

3. What happens to the price and quantity of computer chips if there is
 - a. an improvement in technology of producing computer chips
 - b. an decrease in technology of producing computer chips
 - a. An improvement in technology is a technological change that lowers the MC of producing each unit. An improvement in technology leads to a downward shift of the MC curve, which is also called an increase in supply, and leads to a lower price and higher quantity. (See 2A)
 - b. A decrease in technology is a technological change that increases the MC of producing each unit. This is an increase in the MC curve, also called a decrease in supply, and leads to a higher price and lower quantity (See 2B).

4. Kumquats and toothpaste are complements. Graph both the kumquats and toothpaste market. What happens to the price and quantity of toothpaste if
 - a. Unusually good weather results in a larger than average crop of kumquats?
 - b. Kumquats are found to cure cancer?
 - a. First consider the kumquat market, then look at the toothpaste market. A larger crop of kumquats is an increase in supply (Z – vector). This causes a lower price and higher quantity of kumquats in equilibrium. In the toothpaste market, the ceteris paribus condition of relevance is the price of the compliment. When a price of a complement (kumquats) decreases, this causes the demand for toothpaste to increase. Thus, for toothpaste, the price and quantity rise.
 - b. Kumquats curing cancer leads to an increase in demand for kumquats (X – vector). The increase in demand leads to a higher price and quantity for kumquats. The relevant ceteris paribus condition for the demand of toothpaste is the price of the compliment (kumquats). When the price of a compliment increases, the demand for toothpaste decreases. Thus, for toothpaste, the price and quantity fall.

5. Beer and rubbing alcohol are substitutes. Graph both the beer and rubbing alcohol markets. What happens to the price and quantity of rubbing alcohol if

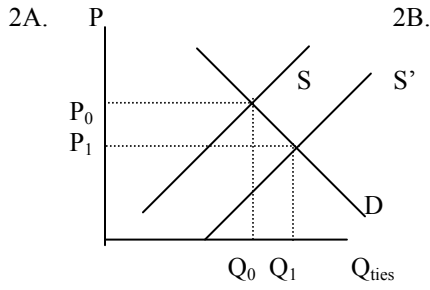
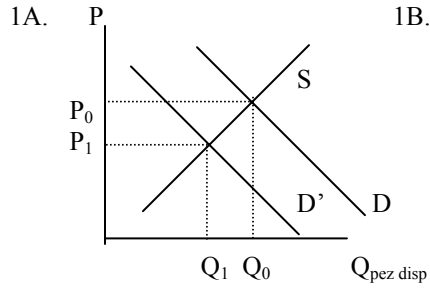
- a. There is a decrease in the price of barley (an input for beer making)?
 - b. Beer is now made illegal to consume? People who are caught drinking beer will be arrested.

- a. First consider the beer market, then look at the rubbing alcohol market. A decrease in an input price of beer is an increase in supply of beer. This causes a lower price and higher quantity of beer in equilibrium. In the rubbing alcohol market, the ceteris paribus condition of relevance is the price of the substitute. When a price of a substitute (beer) decreases, this causes the demand for rubbing alcohol to decrease. Thus, for rubbing alcohol, the price and quantity fall.
 - b. Making beer illegal to consume will cause a decrease in the demand for beer (X – vector). This causes a lower price and lower quantity of beer in equilibrium. In the rubbing alcohol market, the ceteris paribus condition of relevance is the price of the substitute. When a price of a substitute (beer) decreases, this causes the demand for rubbing alcohol to decrease. Thus, for rubbing alcohol, the price and quantity fall.

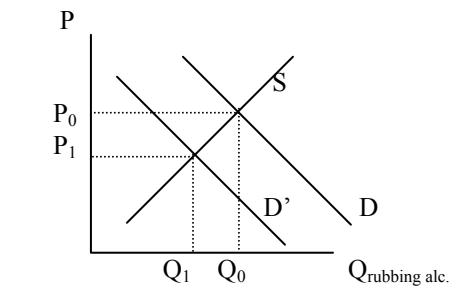
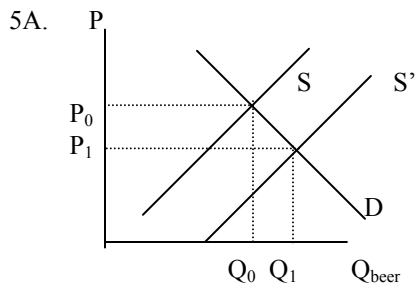
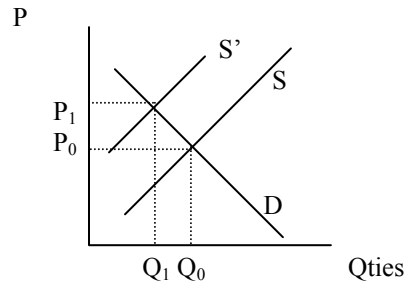
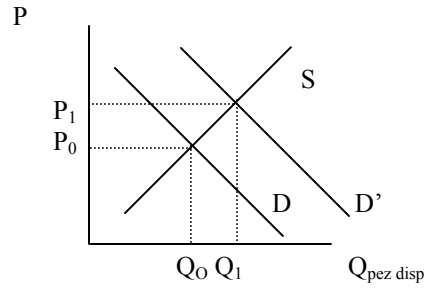
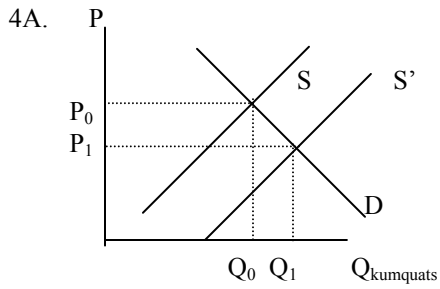
6. What is the effect on p and q for the following cases? Rise, fall, or ambiguous?
 - a. An increase in supply combined with an increase in demand.
 - b. A decrease in supply combined with no change in demand.
 - c. An increase in supply combined with no change in demand.
 - a. This is best done drawing it, or looking at the changes one at a time. The Price effect is ambiguous, while quantity increases.
 - b. Higher price and lower quantity. Draw the graph. This is simple.
 - c. Lower price and higher quantity. Draw the graph. This is also simple.

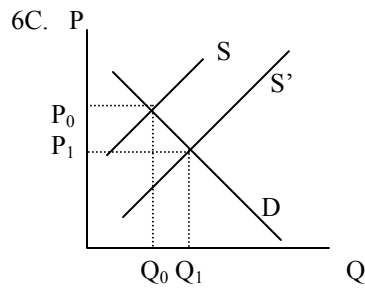
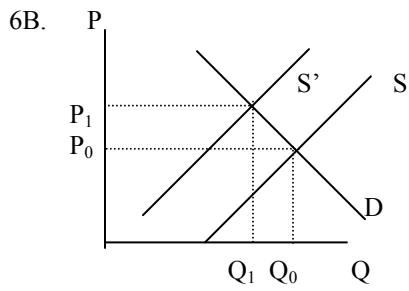
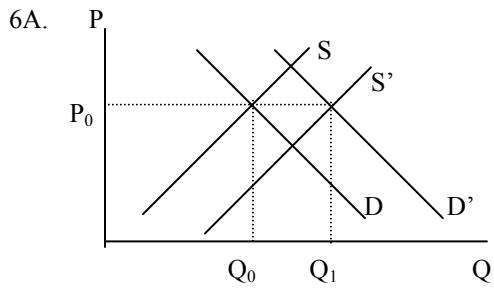
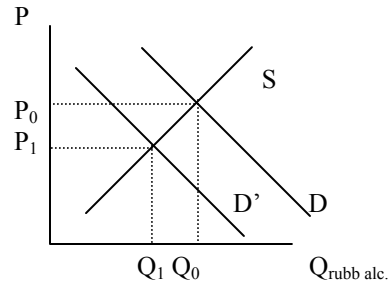
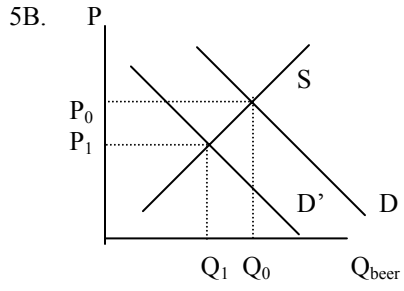
7. M&M's are superior (normal) goods. Graph the M&M market for the following. What happens to the price and quantity of M&M's if
 - a. Income rises and the supply of M&M's increases?
 - b. Income falls and the supply of M&M's increases?
 - a. Income rising causes an increase in demand for a normal good. We also have supply increasing. This is the same situation as 6A. Price is ambiguous, quantity increases.
 - b. Income falling causes a decrease in the demand for a normal good. We also have supply increasing. Draw the graph, or do the changes one at a time. Price falls and quantity is ambiguous.

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3A. See 2A. 3B. See 3B.





7A. See 6A

