



**ECN 2100**  
**Intermediate Microeconomics**  
**Tutorial 1**

**First Semester 2015**

Mr. Sydney Armstrong  
[syd\\_king\\_2005@yahoo.com](mailto:syd_king_2005@yahoo.com)

Many brands offer a “limited” edition (LE) of their products for sale in which a particular style or product is produced in limited quantities and no reproduction will be made once they are sold out at retailers. Use a supply---and---demand diagram to explain how the market for LE reaches the equilibrium.

2. Suppose the enrollment at your university unexpectedly declines.

***True or False:***

Apartment owners in the area will face higher vacancy rates and might raise their rents to compensate.

3. Cosmetic surgery is more expensive in New York than in Iowa; nevertheless New Yorkers demand more cosmetic surgery than Iowans do.

***True or False:***

This shows that our simple “supply and demand” model does not apply to things like cosmetic surgery.

**4. *True or False:***

If we observe that fewer cars are being purchased this year than last year, then we should expect the price of cars to fall.

5. Increasingly, instead of advertising in newspapers, individuals and firms use websites that offer free or inexpensive classified ads, such as Realestate.com and Expedia.com and portals like Google and Yahoo. Using a supply--- and---demand model, explain what will happen to the equilibrium levels of newspaper advertising as the use of the internet grows. Will the growth of the internet affect the supply curve, the demand curve, or both? Why?

6. For each sentence below describing changes in the tangerine market, note whether the statement is true, false, or uncertain, and explain your answer. You will find it helpful to draw a graph for each case.

- a. If consumer income increases and worker wages fall, quantity will rise and prices will fall.
- b. If orange prices decrease and taxes on citrus fruits decrease, quantity will fall and prices will rise.
- c. If the price of canning machinery (a complement) increases and the growing season is unusually cold, quantity and price will both fall.

7. Assume that, after many years of housing rent control, these controls were removed, and rents rose by nearly 40%. Using supply and demand models, illustrate how the laws and then its elimination affected the rental housing market. Discuss the effects on the equilibrium rental price and the quantity of housing rented.

8. The demand function for roses is  $Q = a - bP$ , and the supply function is  $Q = c + eP + ft$ , where  $a$ ,  $b$ ,  $c$ ,  $e$  and  $f$  are positive constants and  $t$  is the average temperature in a month. Show how the equilibrium quantity and price vary with temperature.

9. Green et al. (2005) estimate the supply and demand curves for California processed tomatoes.

The supply function is a logarithmic function:  $\ln(Q) = 0.2 + 0.55\ln(P)$ , where  $Q$  is the quantity of processing tomatoes in millions of tons per year and  $P$  is the price in dollars per ton. The demand function is  $\ln(Q) = 2.6 - 0.2\ln(P) + 0.15\ln(Pt)$ , where  $Pt$  is the price of tomato paste (which is what processing tomatoes are used to produce) in dollars per ton. In 2002,  $Pt = 110$ .

- a. What is the demand function for processing tomatoes, where the quantity is solely a function of the price of processing tomatoes?
- b. Solve for the equilibrium price and quantity of processing tomatoes (explain your calculations, and round to two digits after the decimal point).
- c. Draw the supply and demand curves (note that they are not straight lines), and label the equilibrium and axes appropriately.
- d. Suppose that the government imposes a price support (price floor) on processing tomatoes at \$65 per ton. The government will buy as much as farmers want to sell at that price. Thus processing firms pay \$65.

d.1 Determine how many tons firms buy and how many tons the government buys. Illustrate your answer in a supply---and---demand diagram.

d.2 Show how the quantity of processing tomatoes supplied varies with the price ( $dQ/dP$ ).

(Hint: It might be easier to exponentiate both sides of the equation first.)