**CHAPTER TWO - Baye**

**Market Forces : Demand And Supply**

**Demonstration Problem 2-1**

An economic consultant for *X* Corp. recently provided the firm’s marketing manager with this estimate of the demand function for the firm’s product :

$$Q\_{x}^{d }=12,000-3P\_{x}+ 4P\_{y}- 1M+2A\_{x} $$

Where $Q\_{x}^{d}$ represents the amount consumed of good *X*, $P\_{x} $is the price of good *X*, $P\_{y} $is the price of good *Y*, *M* is income, and $A\_{x}$ represents the amount of advertising spent on good *X* . Suppose good *X* sells for $200 per unit, good *Y* sells for $15 per unit, the company utilizes 2,000 units of advertising, and consumer income is $10,000. How much of good X do consumers purchase? Are good *X* and *Y* substitutes or compliments? Is good *X* a normal or an inferior good?

**Demonstration Problem 2-2**

A typical consumer’s demand for the Happy Beverage Company’s product looks like that in Figure 2-5(a). If the charges a price of $2 per liter, how much revenue will the firm earn and how much consumer surplus will the typical consumer enjoy? What is the most a consumer would be willing to pay for a bottle containing exactly 3 liters of the firm’s beverage?

**Demonstration Problem 2-3**

Your research department estimates that the supply function for television sets is given by

$$Q\_{x}^{s}=2,000+3P\_{x}- 4P\_{r}- P\_{w} $$

Where $P\_{x} $is the price of TV sets, $P\_{r} $represents the price of a computer monitor, and $P\_{w} $is the price of an input used to make television sets. Suppose TVs are sold for $400 per unit, computer monitors are sold for $100 per unit, and the price of an input is $2,000. How many television sets are produced?

**Demonstration Problem 2-4**

According to an article in China Daily, China recently accelerated its plan to privatize tens of thousand of state-owned firms. Imagine that you are an aide to a senator on the Foreign relation committee of the U.S. Senate, and you have been asked to help the committee determine the price and quantity that will prevail when competitive forces are allowed to equilibrate the market. The best estimates of the market demand and supply for the good (in U.S. dollar equivalent prices) are given by $Q^{d}=10-2P and Q^{s}=2+2P,$ respectively. Determine the competitive equilibrium price and quantity.

**Demonstration Problem 2-5**

Based on your answer to the Senate Foreign Relation Committee ( Demonstration Problem 2-4 ), one of the senators raises a concern that the free market price might be too high for the typical Chinese citizen to pay. Accordingly, she asks you to explain what would happen if the Chinese government privatized the market, but then set a ceiling price at the Chinese equivalent of $1.50. How do you answer? Assume that the market demand and supply curves (in U.S. dollar equivalent prices) are still given by

$$Q^{d}=10-2P and Q^{s}=2+2P$$

**Demonstration Problem 2-6**

One of the members of the Senate Foreign Relation Committee has studied you analysis of Chinese privatization (Demonstration Problems 2-4 and 2-5) but is worried that the free-market price might be too low to enable producers to earn a fair rate of return on their investment. He asks you to explain what would happen if the Chinese government privatized the market, but agreed to purchase the good from suppliers at a floor price of $4. What do you tell the senator? Assume that the market demand and supply curves (in U.S. dollar equivalent prices) are still given by

$Q^{d}=10-2P and Q^{s}=2+2P$