



B.E. International Program

Faculty of Economics, Thammasat University



EE 320 Introductory Mathematical Economics (Section 046402)

Semester 1/2013

Quiz 1 (a)

Consider the following demand and supply functions

$$Q_D = 15 - P \quad \text{and} \quad Q_S = 3 + 2P$$

a) (4 points) Find the equilibrium price and equilibrium quantity.

Answer: $P_0^* = 4$; $Q_0^* = 11$

b) (4 points) Suppose a tax of \$0.60 per unit is imposed on the consumer. How will this tax affect the equilibrium price and quantity?

Answer:

After-tax equilibrium, $15 - (P + 0.6) = 3 + 2P$, where $P = P_s$

$$\Rightarrow P_s^* = 3.8$$

$$\Rightarrow P_d^* = P_s^* + 0.6 = 4.4$$

$$\Rightarrow Q^* = 10.6$$

c) (2 points) What are the tax burden per unit on the consumer and the tax burden per unit on the producer?

Answer:

Tax burden per unit on consumer: $P_d^* - P_0^* = \$0.4$

Tax burden per unit on producer: $P_0^* - P_s^* = \$0.2$