EC 311
Equilibria and Utility Functions
Winter 2024

1. Suppose the market for concert tickets at the Hayden Homes Amphitheater is represented by the following supply and demand equations.

$$Q_s = 9P - 400 \quad \text{and} \quad Q_D = 1000 - 5P$$

Find each of the following:

a.) Equilibrium price

b.) Equilibrium quantity

2. Suppose the venue fixes the price of tickets at $90. Find each of the following:

a.) New quantity supplied

b.) New quantity demanded

c.) The price people are willing to pay given the new quantity supplied

d.) Is this a price floor or price ceiling?

3. Identify the type and find the Marginal Rate of Substitution (MRS) for the following utility functions:

a.) $U(x_1, x_2) = x_1^3 x_2^7$

b.) $U(x_1, x_2) = \min\{2x_1, 3x_2\}$

c.) $U(x_1, x_2) = 2x_1 + x_2$

d.) $U(x_1, x_2) = 2\ln(x_1) + 3x_2$

4. Suppose an individual's utility for good x is described by the following table. Fill out the columns for marginal benefit and marginal cost. What quantity of good x should the individual consume? What is the utility at this quantity?

Quantity	Benefit	Marginal Benefit	Marginal Cost
1	10		5
2	17		5
3	22		5
4	24		5
5	25		5