

Lecture 20 Worksheet (ECON211), AY 2025-26 [Date: 11 Sep 2025]

1. The supply function for an unnamed product is given by $p = 10 + q + 0.1q^2$. Compute the change in the producer surplus as the price changes from $p = 30$ to $p = 70$.

2. Find the degree of homogeneity for the following functions: (i) $f(x, y) = xy$, (ii) $f(x, y) = \sqrt{x} + \sqrt{y}$, and (iii) $f(x, y) = \frac{x}{y}$.

3. Find the marginal utilities and the marginal rate of substitution for the following utility functions: (i) $f(x_1, x_2) = 4x_1 + 4x_2$, (ii) $f(x_1, x_2) = \sqrt{x_1} + x_2$.

4. Compute the marginal products and the marginal rate of technical substitution for the following production functions: (i) $F(K, L) = K^3L$, (ii) $F(K, L) = 2K + 3L$.