

Lecture 04 Worksheet (ECON211), AY 2025-26

1. My electricity supplier's tariff has three components. First, I pay ₹1,000 every month irrespective of how much electricity I use. Second, I pay ₹6 for every kilowatt-hour (kWh) used between 8 am and 8pm (the daytime rate). Third, I pay ₹2 for every kWh used between 8pm and 8 am (the night or off-peak rate).

- a Calculate my monthly bill if my usage is 500kWh during daytime and 200kWh during the night.
- b I notice that my washing machine uses 100kWh (per month) during the day. I change this usage to nighttime. By how much my electricity bill would change?

2. Solve the following inequality: $|x - 1| + |x - 2| + |x - 3| \leq 6$

3. The Indian government announces a new *samosa-tax* (₹4 per samosa). The consumers will bear the burden of this tax. If the pre-tax demand for samosa is $Q^D = 2000 - 100P^D$, and the supply of samosa is $Q^S = 300P^S - 200$, compute the new market equilibrium price(s) and quantity. (**Bonus:** How much does the government make?)

4. Given the following supply and demand equations, solve for equilibrium price and quantity.

$$P = Q_s^2 + 14Q_s + 22$$

$$P = -Q_d^2 - 10Q_d + 150$$