

Lecture 10 Worksheet (ECON211), AY 2025-26 [Date: 07 Aug 2025]

1. Find the equation of the line passing through  $(-1, 3)$  and  $(5, -2)$ .

2. Suppose the price  $P$  per unit obtained by a firm in producing and selling  $Q$  units is  $P = 112 - 2Q$ , and the cost of producing and selling  $Q$  units is  $C = 2Q + 1/2Q^2$ . Find the profit maximizing quantity and the maximum profit.

3. If a cocoa shipping firm sells  $Q$  kg of cocoa in India, the price received is given by  $P_E = 5 - \frac{1}{3}Q$ . On the other hand, if it buys  $Q$  kg from its only source in Ghana, the price it has to pay is given by  $P_G = 2 + \frac{1}{6}Q$ . In addition, it costs ₹2 per kg to ship cocoa from its supplier in Ghana to its customers in India. Find the profit-maximizing output and the maximum profit.

4. The expenditure of a household on consumer goods,  $C$ , is related to the household's income,  $y$ , in the following way: When the household's income is \$1,000, the expenditure on consumer goods is \$700, and whenever income increases by \$100, the expenditure on consumer goods increases by \$50. Express the expenditure on consumer goods as a function of income, assuming a linear relationship.