1. The demand curve for a monopolist is given by \( P = 350 - 7Q \), and the short-run total cost curve is given by \( TC = 500 + 70Q \). What is the profit-maximizing price and quantity? Find the monopolist's economic profit.

2. A monopolist faces two separate demand curves: \( P_1 = 65 - 2Q_1 \) and \( P_2 = 35 - 3Q_2 \). The total cost curve is \( TC = 7 + 5Q \). Find \( Q_1, Q_2, P_1, P_2 \).
3. Find the price elasticities at the profit maximizing points for Problem 2.

4. The price elasticity of demand for popsicles on a beach in a small east coast resort town is -5 in the month of May, while in July the elasticity falls to -1.5. A single vendor supplies the popsicles to the beachcombers. If the marginal cost per popsicle is $0.60, how much should the vendor charge per popsicle in May and July?