Twenty (20) points for each question.

1. Please use a diagram to show the profit-maximizing equilibrium for a monopolist.

2. Why some economists said that “Savings is a necessary evil”? Please use a diagram to depict the paradox of thrift.

3. A perfectly competitive, constant-cost industry is currently in a position of long-run equilibrium. Market demand in the industry is given by

\[ Q = 1,500 - 25P \]

where \( Q \) and \( P \) are market quantity and price, respectively. There are 25 firms in the industry, each operating at the optimal plant size. For each firm, the minimum short-run average variable cost is $10, and the short-run marginal cost is given by:

\[ SMC(q) = \frac{(5q + 20)}{3} \]

where \( q \) is a firm’s quantity.

(a) Calculate the long-run equilibrium market price and quantity.
(b) What are the equilibrium quantity and profit for each firm?
(c) If the government decides to set the output price at $30, what would be the optimal output for each firm in the short run? Should the firm shut down in the long run?
4. Ms. Lee consumes Apples (A) and Bananas (B), has the utility function:

\[ U(A, B) = 10 A^{1/2} B^{1/2} \]

Originally the price of apples is $1 (P_A=1), the price of bananas is $1 (P_B=1), and Ms. Lee’s income is $40. However, the price of bananas suddenly increases to $2. What are the total, substitute and income effects of this price change for bananas?

5. Please use diagrams to show:

(a) Fiscal policy to eliminate a recessionary gap

(b) The inflationary effects of expansionary monetary policy