Problem 1

The menu at Joe's coffee shop consists of a variety of coffee drinks, pastries, and sandwiches. The marginal product of an additional worker can be defined as the number of customers that can be served by that worker in a given time period. Joe has been employing one worker, but is considering hiring a second and a third. Explain why the marginal product of the second and third workers might be higher than the first. Why might you expect the marginal product of additional workers to diminish eventually?

Problem 2:

John McAuley, a lawyer working for a large law firm and earning $60,000 per year, is contemplating giving up his job and setting up his own law practice. He estimates that renting an office would cost $10,000 per year, hiring a legal secretary would cost $20,000 per year, renting the required office equipment would cost $15,000 per year, and purchasing the required supplies, paying for electricity, telephone, etc. would cost another $5,000. The lawyer estimated that his total revenues for the year would be $100,000, and he is indifferent between keeping his present occupation with the large law firm and opening his own law office.

a. How much would be the explicit costs of the lawyer for running his own law office for the year?
b. How much would the accounting costs be? The implicit costs? The economic costs?
c. Should the lawyer go ahead and start his own practice?

Problem 3:

A foodstuff firm has variable cost function: $VC = 2q(q+1)$. The foodstuff market is considered as perfect competition market with many firms that are doing business.

a. Find the short run supply curve of the firm?
b. The firm is break even at total revenue of $702. Calculate the firm's price and output at this break-even point?
c. What is the firm's fixed cost?
d. Calculate the price at which firm will shut-down its business?

Problem 4:

In the short-run, the ABC Company has fixed cost of 4. The firm's average variable cost function is $AVC = q + 1$. The current market price is $7.

a. What is the firm's output to maximize profit? Calculate this profit level?
b. Find the market price at which firm is at break-even status?
c. Calculate the market price at which firm will shut down the business?
d. Find the firm's short-run supply function? Draw the firm's supply curve.