(f) Assume instead that regulators impose a price ceiling of $22.

   (i) What is the marginal revenue for the eighth unit?

   (ii) What quantity will be produced?

(g) Assume instead that the monopolist practices perfect price discrimination (also called first-degree price discrimination).

   (i) What quantity will be produced?

   (ii) What will be the value of the consumer surplus?

---

2. Assume that the market for avocados is perfectly competitive. The typical firm is earning positive economic profit in the short-run equilibrium.

(a) Draw a correctly labeled graph for the typical firm, illustrating the short-run equilibrium and labeling the equilibrium market price and output P_E and Q_E, respectively.

(b) Assume there is an increase in the market wage rate for labor, a variable input. Show on your graph in part (a) the effect of the wage increase on the marginal cost curve in the short run.

(c) Assume that avocado producers hire workers from a perfectly competitive labor market. Draw a graph of labor supply and demand for the typical firm and label the supply curve MFC and the demand curve MRP. Assume the market wage rate increases from w_1 to w_2. Show the effect of the wage increase on the graph, labeling the initial quantity of labor hired QL_1 and the new quantity of labor hired QL_2.

---

3. Assume that the market for good X is perfectly competitive and that the production of good X creates a negative externality.

(a) Draw a correctly labeled graph of the market for good X and show each of the following.

   (i) The marginal private cost and marginal social cost of good X, labeled MPC and MSC, respectively

   (ii) The market quantity, labeled Q_m

   (iii) The allocatively efficient quantity, labeled Q_s

   (iv) The area of deadweight loss, shaded completely

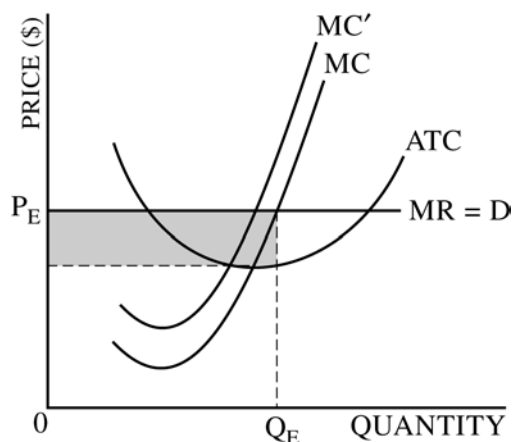(b) Assume that a lump-sum tax is imposed on the producers of good X. What happens to the deadweight loss? Explain.

STOP

END OF EXAM

Question 2
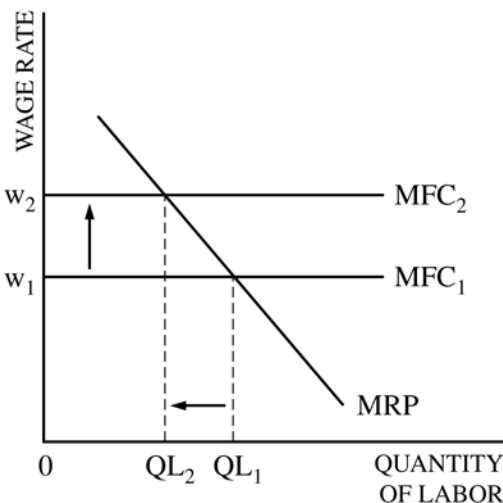
6 points (3 + 1 + 2)

(a) 3 points:
- One point is earned for a correctly labeled graph with a horizontal demand curve at the equilibrium price, P_E.
- One point is earned for showing the equilibrium quantity, Q_E, at MR = MC.
- One point is earned for showing that ATC is below demand or MR at Q.

(b) 1 point:
- One point is earned for showing a leftward shift of the MC curve.

(c) 2 points:
- One point is earned for drawing a correctly labeled graph with a horizontal MFC_1 curve at w_1 and a downward-sloping MRP curve and showing QL_1.
- One point is earned for shifting the MFC curve up to w_2 and showing the new equilibrium quantity of labor hired, QL_2, which is smaller than QL_1.