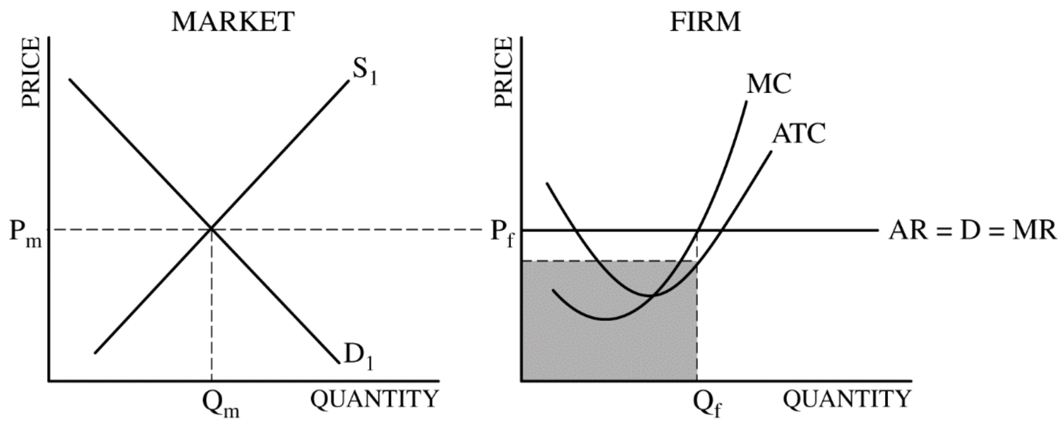
Question 1

10 points (1+5+1+3)

(a) 1 point:

- One point is earned for stating that the firm's price is equal to the market price because the firm is a price taker.



(b) 5 points:

- One point is earned for drawing a correctly labeled graph of the market with P_m, Q_m, a downward-sloping demand curve, and an upward-sloping supply curve.
- One point is earned for identifying the firm's profit-maximizing quantity, Q_f at marginal cost (MC) equal to price or demand, or marginal revenue, or average revenue.
- One point is earned for showing the firm's average revenue curve, labeled AR, which is horizontal at the price determined by the market.
- One point is earned for showing the firm's average total cost (ATC) curve, such that the MC curve is passing through the minimum of the ATC curve, and P > ATC.
- One point is earned for showing the area representing total cost shaded completely.

(c) 1 point:

- One point is earned for stating that the firm's total revenue will fall to zero, because quantity decreases to zero, or because the firm is a price taker, or because the firm is facing a perfectly elastic demand, or the firm loses all of its customers, or the firm has no market power.

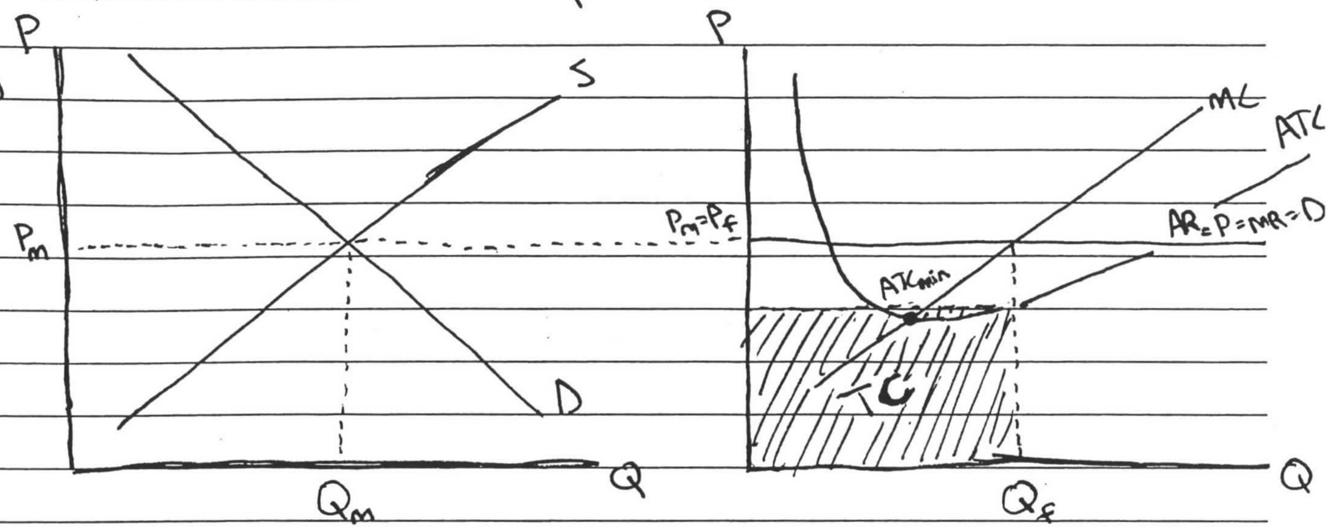
(d) 3 points:

- One point is earned for stating that the firm's quantity will remain the same in the short run and for explaining that MR or MC will not change in the short run. (Or, because the lump sum subsidy has no effect on marginal revenue and/or marginal cost, or that only fixed costs will be affected.)
- One point is earned for stating that the market price will decrease and the quantity will increase.
- One point is earned for the explanation that positive profits lead to entry of new firms that will increase the industry supply.

1A1

a) the market price is equal to the firm's price because in a perfectly competitive market firms are price-takers

b)



c) if a firm were to raise its price, that firm's total revenue would go to zero ~~as~~ because, in a PCM, firms' demand curves are perfectly elastic and therefore an increase in price would cause the firm to sell nothing

d) i. the firm's short-run quantity would remain the same because lump-sum subsidies do not change the marginal cost curve

ii. the market's price ~~and quantity~~ would decrease and its quantity would increase as the supply curve shifts out due to more firms entering the market to take advantage of its ~~pro~~ profitability.

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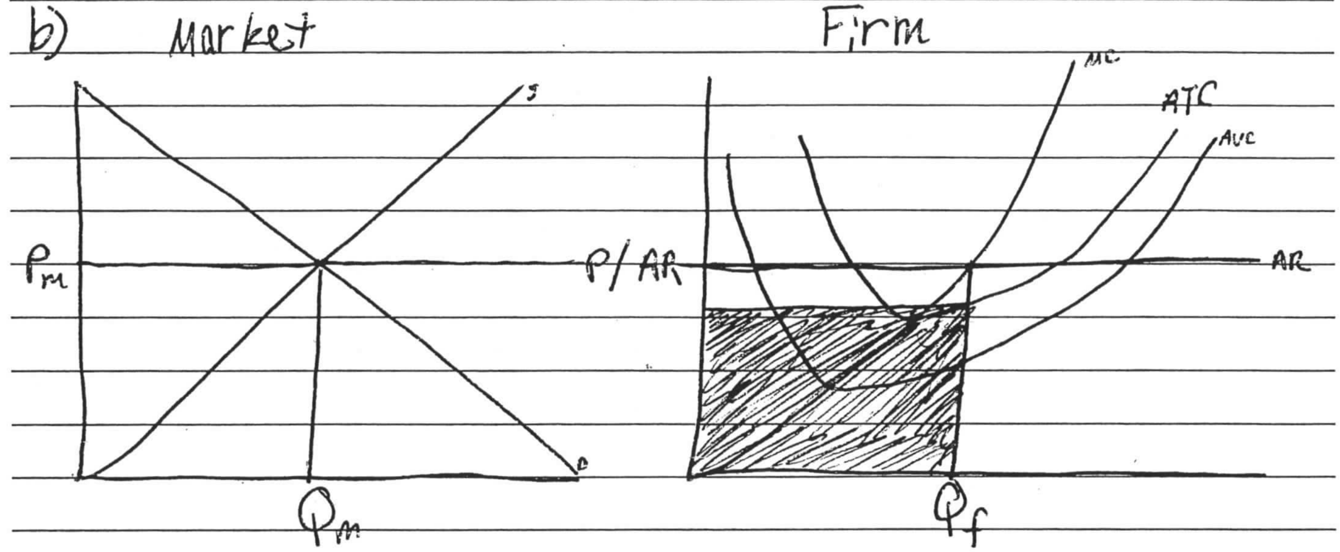
a) the market price is equal to the firms price because the firm is in a perfectly competative industry, it is a price taker which means it takes the price in the market. Because the firm takes the market price, the firm has the same price as the market

b)



c) Total revenue will increase because the one firm will increase its price and quantity when its price increaces because of the upward sloping marginal cost curve. The firm will produce more units ~~at~~ a higher price.

 1B2 of 2

d) i) the firms quantity will decrease ~~increase~~ in the short run because a lump sum subsidy will shift the marginal cost curve to the right and decrease the fixed costs. ~~It~~ will also shift supply to the left which causes a decreace in price and a decrease in price means a decrease in quantity.

ii) The market price will increase in the long run because less ~~more~~ firms have entered the industry due to losses which decreaces supply and increaces price. The market quantity will decrease because as firms leave the industry due to losses because of lower fixed and average total cost curves, supply will decreace causing a decrease in the quantity in the long run.

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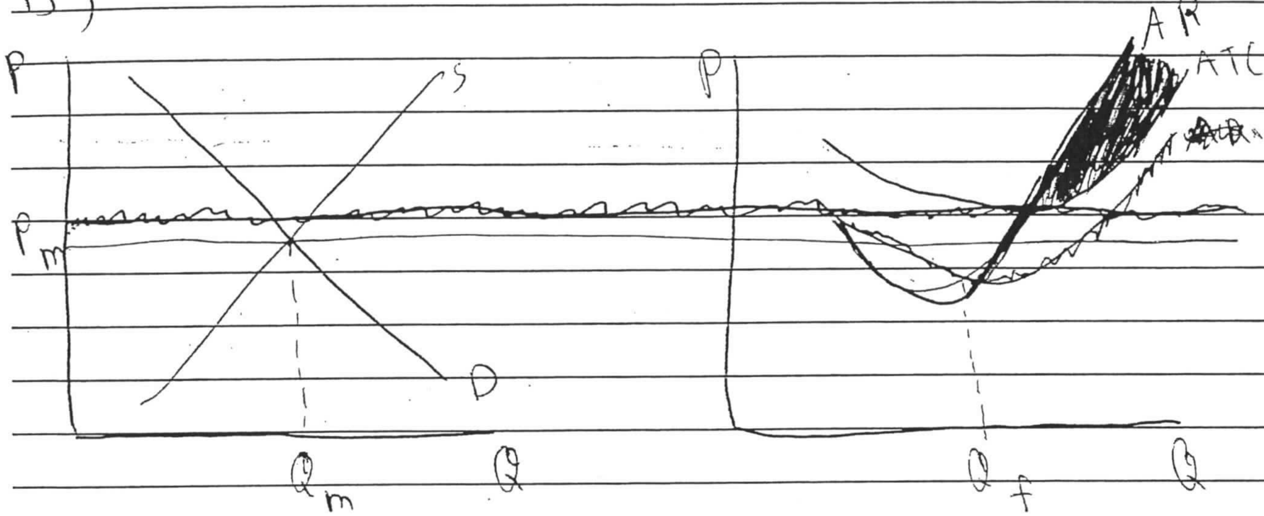
1C1

a) The market price is greater than the firm's price because in order to have a positive economic profit the ACT has to be above the equilibrium price and that means that the market price is greater than the firm's price

B)



c) The Total Revenue will increase due to the price being over ATC.

Short run

D)(i) firm's quantity will decrease due to the government subsidy.

D)(ii) Long run market price will have zero profit / price floor. The quantity will remain the same.

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Question 1

Overview

The question assessed students' ability to work with a perfectly competitive model under various circumstances. Part (a) required students to explain whether the market price is greater than, less than, or equal to the price a typical firm charges. The question tested whether students understand why the perfectly competitive firm is a price taker. Part (b) required students to draw and correctly label side-by-side graphs of a perfectly competitive market and a typical firm in the market. Items required in part (b) tested for understanding: 1) the determination of the market equilibrium price and quantity; 2) how the typical firm determines its profit-maximizing output level; 3) that the average revenue (AR) for the firm is constant and equal to the price determined by the market; 4) that when the firm is earning economic profits the average total cost (ATC) must be less than the price at the level of output produced by the firm and that the marginal cost (MC) curve intersects the ATC at the minimum of the ATC; and 5) the determination of the total cost of a firm earning economic profits using a graph. In part (c) students needed to explain why, if one of the firms in the industry raises its price above the market price, its total revenue will fall to zero. Part (d) assumed the perfectly competitive industry is in long-run equilibrium. The two questions in part (d) tested whether students understand the impact of a lump-sum subsidy on the firm's output in the short run, and the process that changes the market price and output in the long run.

Sample: 1A
Score: 10

The student answered all parts of the question correctly and earned all 10 points.

Sample: 1B
Score: 6

The student earned 1 point in part (a) for correctly explaining that the market price is equal to the firm's price because the firm is a price taker. The student earned 1 point in part (b)(i) for correctly drawing a graph for the perfectly competitive market and correctly labeling the market price, P_m, and quantity, Q_m. The student earned 1 point in part (b)(ii) for correctly identifying the firm's profit-maximizing quantity at marginal cost (MC) equal to price or average revenue. The student earned 1 point in part (b)(iii) for correctly drawing the firm's average revenue curve as a horizontal line at the price determined by the market. The student earned 1 point in part (b)(iv) for correctly drawing the firm's average total cost (ATC) curve such that the MC curve passes through the minimum of the ATC curve, and P>ATC when the firm is earning positive economic profit. The student earned 1 point in part (b)(v) for correctly shading the area of total cost.

Sample: 1C
Score: 1

The student earned 1 point in part (b)(i) for correctly drawing a graph for the perfectly competitive market and correctly labeling the market price, P_m, and quantity, Q_m.