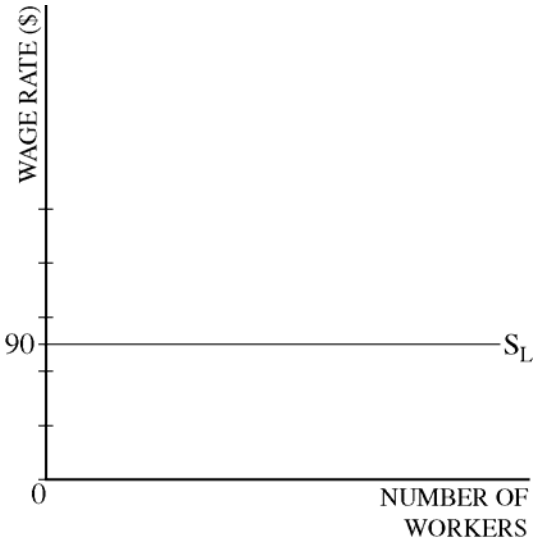
AP® MICROECONOMICS
2007 SCORING GUIDELINES

Question 2

6 points (1 + 2 + 3)



(a) 1 point:
- One point is earned for correctly labeled axes with a horizontal labor supply curve at $90.

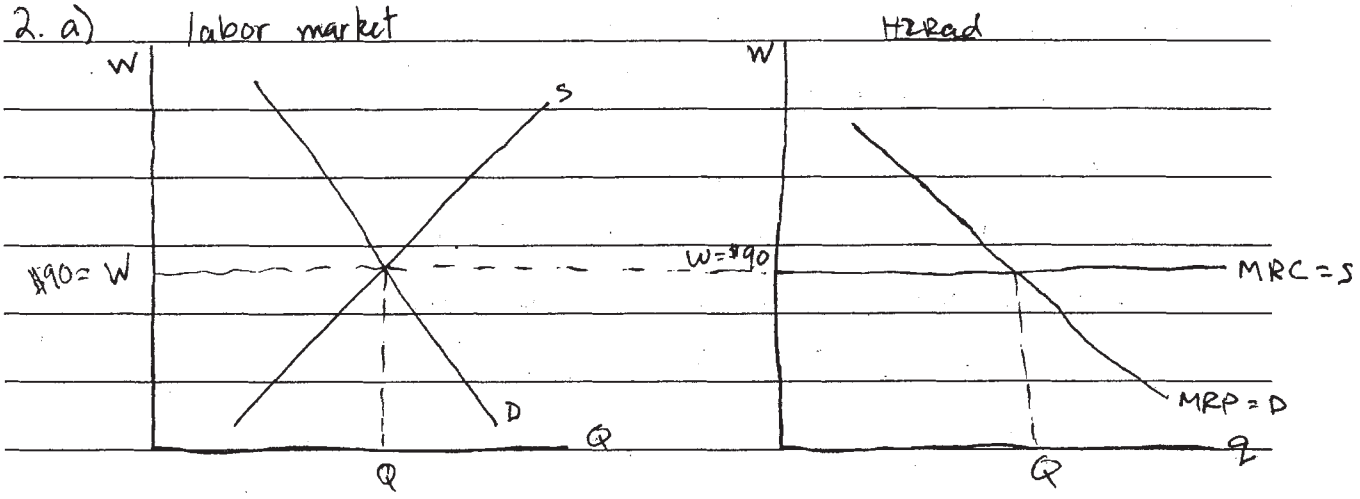
(b) 2 points:
- One point is earned for identifying the profit-maximizing output as 75, or between 75 and 79.
- One point is earned for stating that MRP is greater than $90 for the fifth worker, but less than $90 for the sixth worker.

(c) 3 points:
- One point is earned for stating that the quantity of labor HZRad hires increases.
- One point is earned for the explanation that the marginal product of labor increases at each input level, or the marginal product of labor curve shifts to the right, or the demand curve for labor shifts to the right.
- One point is earned for stating that the wage rate will remain constant.

Write in the box the number of the question you are answering on this page as it is designated in the exam.

Question 2 | 2A,

2. a)



2. b) HZRad will hire workers as long as MRP ≥ MRC.

Number Workers	Q Radios (per day)	TR	MRP
0	0	0	—
1	20	400	400
2	45	900	500
3	60	1200	300
4	70	1400	200
5	75	1500	100
6	79	1580	80

TR = output x $20 (revenue)

MRP = Δ TR / Δ # workers

The MRC of workers is $90. Therefore HZRad will hire 5 workers b/c $100 > $90 and $80 < $90.

They will produce 75 radios at this level.

Question 2

Write in the box the number of the question you are answering on this page as it is designated in the exam.

2A2

c) ↑ productivity ⇒ ↑ MP ⇒ ↑ MRP (which is MR·MP) ⇒ ↑ D for workers ⇒ ↑ q

i. They will hire more workers (see above logic).

ii. Since H2Rad is the only firm that is effected by the new technology, there will be no supply or demand shifts in the labor market. H2Rad is a wage-taker and the wage didn't change, so H2Rad does not change its wages paid.

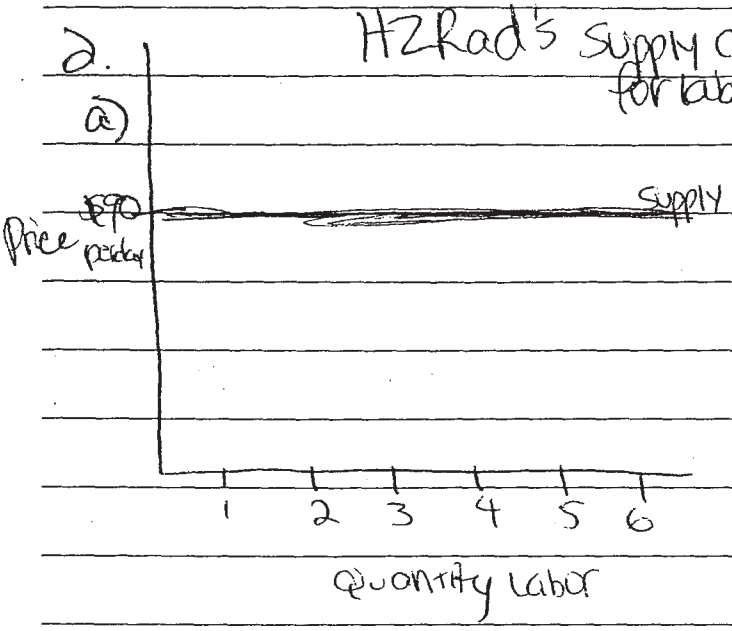
Write in the box the number of the question you are answering on this page as it is designated in the exam.

2

2B

2.

a)



Supply will be perfectly elastic because HzRad can hire as many workers as it wants at $90 a day.

b) HzRad's profit-maximizing output level is when 75 radios are produced (per day). This is because at this point, is closest to MFC=MRP, since the MP is 5 and the MR is $20. MR x MP = MRP and MRP = $100. Since MFC is $90, this is the closest this firm can get to hiring the prof maximizing # of workers (where the amount $ each wkr brings in = wage).

c) i) HzRad will hire more workers because if workers become more productive, MP↑ and when MP↑ (since MP is a factor of MRP), MRP↑, and MRP = Demand for labor. Therefore, demand for labor increases & more workers are hired.

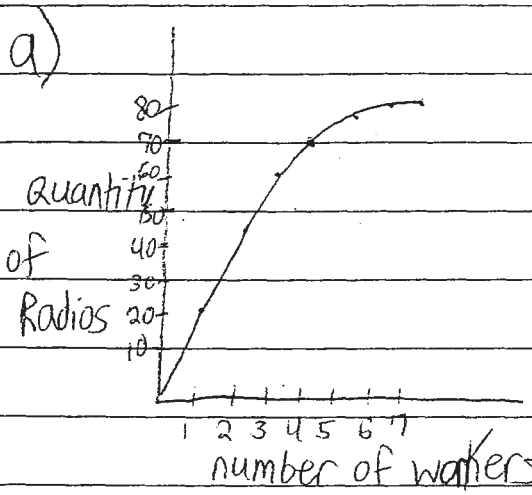
ii) The new wage to these workers will be smaller, since more workers are being hired. This can be shown since there was a shift (increase) in supply due to technology. Price (wage) ↓, and Q↑.

Write in the box the number of the question you are answering on this page as it is designated in the exam.

2

2C

a)



b) HZRad's profit maximizing output level is 75. By finding the margianal returns, HZRad would stop hiring after 5 workers, because the wage of $90 is more than the margainal profit of 4 more radios, which is $80. At the output level of 75, margainal profit is $100, so they still make money.

c) i) The new technology will decrease the quantity of unskilled labor hired because each worker is more productive, so not as many are needed.

ii) The workers will receive increased wages since there are now less ~~worked~~ workers hired.

AP® MICROECONOMICS
2007 SCORING COMMENTARY

Question 2

Overview

The intent of the question was to evaluate students' understanding of profit-maximizing labor usage by a firm.

Sample: 2A
Score: 6

The student earned all points in this question.

Sample: 2B
Score: 4

The student lost 1 point in part (b) for failing to show that the sixth unit of labor hired will reduce profits. In part (c)(ii) the student lost 1 point for incorrectly concluding that the rightward shift in the demand for labor will cause the wage rate to fall, even though the labor supply curve is horizontal.

Sample: 2C
Score: 2

The student earned 2 points in part (b) for a correct conclusion and an adequate explanation.