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# AP<sup>®</sup> Microeconomics

## Sample Student Responses and Scoring Commentary Set 2

### **Inside:**

#### **Free-Response Question 2**

- ☒ **Scoring Guidelines**
- ☒ **Student Samples**
- ☒ **Scoring Commentary**

**Question 2: Short****5 points**

<b>A</b>	State that the profit-maximizing number of miners is 4.	<b>1 point</b>
Point 1		
<b>B</b>	State that Quartz Excavations will pay a wage rate that is less than \$15 and explain that the wage rate paid by a monopsonist is determined by the supply of labor at the quantity of labor hired. Thus, the wage rate associated with the hiring of 4 miners is \$10.	<b>1 point</b>
Point 2		
<b>C</b>	Calculate the total wage bill as \$50 and show your work.	<b>1 point</b>
Point 3	Total Wage Bill = $\$25 \times 2 = \$50$	
<b>D (i)</b>	State that the marginal revenue product of miners will increase and explain that the increase in demand for quartz will increase the price and marginal revenue of quartz.	<b>1 point</b>
Point 4		
<b>(ii)</b>	State that the marginal factor cost of the last miner hired will be greater than the marginal factor cost of the last miner hired before the increase in the demand for quartz.	<b>1 point</b>
Point 5		

**Important:** Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1



Question 2



Question 3



Begin your response to each question at the top of a new page.

- A. Quartz Excavations' profit-maximizing number of miners to hire is 4.
- B. Quartz Excavations will pay its profit-maximizing number of miners a wage rate that is less than \$15. The wage rate that corresponds to a quantity of 4 miners on the supply or labor curve is \$10, which is less than \$15.
- C.  $\$25 \times 2 = \underline{\$50}$  will equal the total wage bill for Quartz Excavations, at the profit-maximizing number of miners.
- D. (i) The marginal revenue product of miners will increase. An increase in the demand for quartz will increase the price of quartz at every quantity, which would increase the marginal revenue of a firm that mines quartz. Thus, the value of the marginal revenue product of miners will increase.
- (ii) The marginal factor cost of the last miner hired will be greater than the marginal factor cost of the last miner hired before the demand for quartz increased.

Page 4

Use a pencil or pen with black or dark blue ink. Do NOT write your name. Do NOT write outside the box.

Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3

Begin your response to each question at the top of a new page.

② A)  $MFC = MRP_c$

$$Q = 4$$

B) less than \$15, at  $MFC = MRP$  (profit-maximizing number of miners), Quartz Excavations will pay its miners a wage rate that equal to supply which is equal to \$10 and less than \$15.

C) Price floor on wages at \$25, meaning miners receiving wage \$25 (supply of labor). At that point,  $MFC$  of labor is \$50.

$$\text{Total wage bill} = \$50 \times 10 = \$500$$

D) i) Increase, when the demand of quartz increases, the price of quartz will also increase, increasing the  $MR$ ,  $\uparrow MR \cdot MP = \uparrow MRP_c$  as a result,  $MRP_c$  will increase.

ii) Greater than before.

**Important:** Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1



Question 2



Question 3



Begin your response to each question at the top of a new page.

- A. 4 miners
- B. They will pay less than \$15
- C.  $25 \times 4 = \$100$
- D. The marginal revenue product of miners will increase because demand increased.

The marginal factor cost of the last miner will be greater than.

Page 3

Use a pencil or pen with black or dark blue ink. Do NOT write your name. Do NOT write outside the box.

## Question 2

**Note:** Student samples are quoted verbatim and may contain spelling and grammatical errors.

### Overview

**NEW for 2025:** The question overviews can be found in the *Chief Reader Report on Student Responses* on [AP Central](#).

### Sample: 2A

**Score: 5**

#### Part A

The response earned point 1 for stating 4 miners.

#### Part B

The response earned point 2 for stating that the “wage rate ... is less than \$15” and explaining that the supply of labor at 4 miners corresponds to a \$10 wage rate.

#### Part C

The response earned point 3 for calculating the total wage bill as \$50 and showing the work.

#### Part D

The response earned point 4 for stating that the marginal revenue product for miners will increase and explaining that when the demand for quartz increases, the price of quartz increases and marginal revenue increases. The response earned point 5 for stating that the marginal factor cost of the last miner hired will be greater than before the increase in demand for quartz.

### Sample: 2B

**Score: 4**

#### Part A

The response earned point 1 for stating 4 miners.

#### Part B

The response earned point 2 for stating that the wage rate is less than \$15 and explaining that the wage rate is determined by the supply curve where the wage rate is \$10.

#### Part C

The response did not earn point 3 because the response does not calculate the total wage bill as \$50.

#### Part D

The response earned point 4 for stating the marginal revenue product will increase and explaining that the increase in the demand for quartz will increase the price and marginal revenue of quartz. The response earned point 5 for stating “Greater than before.”

## Question 2 (continued)

**Sample: 2C**

**Score: 2**

Part A

The response earned point 1 for stating 4 miners.

Part B

The response did not earn point 2 because the response does not explain that the wage rate is determined by the supply of labor at 4 miners, so the wage rate is \$10.

Part C

The response did not earn point 3 because the response does not calculate the total wage bill as \$50.

Part D

The response did not earn point 4 because the response does not explain that the increase in the demand for quartz will increase the price and marginal revenue of quartz. The response earned point 5 for stating “greater than.”