

國立中央大學 106 學年度碩士班考試入學試題

所別： 企業管理學系 碩士班 一般己組(一般生)

共 3 頁 第 1 頁

科目： 管理會計學

本科考試可使用計算器，廠牌、功能不拘

*請在答案卷

內作答

- [注意] 1.可不按題號順序作答，但須標明題號。
 2.可用中文或英文作答。
 3.計算題請列出必要之計算式，否則不予計分。

- 一、 Haas Company manufactures and sells one product. The following information pertains to each of the company's first three years of operations:

Variable costs per unit:	
Manufacturing:	
Direct materials	\$20
Direct labor	\$12
Variable manufacturing overhead	\$4
Variable selling and administrative	\$2
Fixed costs per year:	
Fixed manufacturing overhead	\$960,000
Fixed selling and administrative expenses	\$240,000

參考用

During its first year of operations, Haas produced 60,000 units and sold 60,000 units. During its second year of operations, it produced 75,000 units and sold 50,000 units. In its third year, Haas produced 40,000 units and sold 65,000 units. The selling price of the company's product is \$58 per unit.

Required: (32%)

1. Compute the company's break-even point in units sold. (3%)
2. Assume the company uses variable costing:
 - a. Compute the unit product cost for Year 1, Year 2, and Year 3. (6%)
 - b. Compute the net operating income for Year 1, Year 2, and Year 3. (6%)
3. Assume the company uses absorption costing:
 - a. Compute the unit product cost for Year 1, Year 2, and Year 3. (6%)
 - b. Compute the net operating income for Year 1, Year 2, and Year 3. (6%)
4. Compare the net operating income figures that you computed in requirements 2 and 3 to the break-even point that you computed in requirement 1. Which net operating income figures seem counterintuitive? Why? (5%)

- 二、 Magic Realm, Inc., has developed a new fantasy board game. The company sold 15,000 games last year at a selling price of \$20 per game. Fixed expenses associated with the game total \$182,000 per year, and variable expenses are \$6 per game. Production of the game is entrusted to a printing contractor. Variable expenses consist mostly of payments to this contractor.

Required:

- (20%)
1. Prepare a contribution format income statement for the game last year and compute the degree of operating leverage. (10%)
 2. Management is confident that the company can sell 18,000 games next year (an increase of 3,000 games, or 20%, over last year). Compute:
 - a. The expected percentage increase in net operating income for next year. (5%)
 - b. The expected total dollar net operating income for next year. (Do not prepare an income statement; use the degree of operating leverage to compute your answer.) (5%)

注意：背面有試題

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- 三、 Power Serve Equipment Company manufactures power equipment. Power Serve has two primary products—generators and air compressors. The following report was prepared by the controller for Power Serve's senior marketing management:

	Generators	Air Compressors	Total
Revenue	\$1,800,000	\$950,000	\$2,750,000
Cost of goods sold	1,350,000	712,500	2,062,500
Gross profit	<u>\$ 450,000</u>	<u>\$237,500</u>	<u>\$ 687,500</u>
Selling and administrative expenses			253,500
Income from operations			<u>\$ 434,000</u>

The marketing management team was concerned that the selling and administrative expenses were not traced to the products. Marketing management believed that some products consumed larger amounts of selling and administrative expense than did other products. To verify this, the controller was asked to prepare a complete product profitability report, using activity-based costing.

The controller determined that selling and administrative expenses consisted of two activities: sales order processing and post-sale customer service. The controller was able to determine the activity base and activity rate for each activity, as shown below.

Activity	Activity Base	Activity Rate
Sales order processing	Sales orders	\$ 90 per sales order
Post-sale customer service	Service requests	\$300 per customer service request

The controller determined the following additional information about each product:

	Generators	Air Compressors
Number of sales orders	300	800
Number of service requests	90	425

Required: (24%)

- Determine the activity cost of each product for sales order processing and post-sale customer service activities. (12%)
- Use the information in (a) to compute the gross profit to sales percentage and the income from operations to sales percentage for each product. (12%)

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內作答

- 四、 Mohawk Valley Steel Company produces three grades of steel: high, good, and regular grade. Each of these products (grades) has high demand in the market, and Mohawk Valley is able to sell as much as it can produce of all three. The furnace operation is a bottleneck in the process and is running at 100% of capacity. Mohawk Valley is attempting to determine how to improve profitability for the steel operations. The variable conversion cost is \$8 per process hour. The fixed cost is \$1,530,000. In addition, the cost analyst was able to determine the following information about the three products:

	High Grade	Good Grade	Regular Grade
Budgeted units produced	5,000	5,000	5,000
Total process hours per unit	12	12	10
Furnace hours per unit	6	4	2
Price per unit	\$350	\$325	\$300
Direct materials cost per unit	\$140	\$125	\$120

The furnace operation is part of the total process for each of these three products. So, for example, 6 of the 12 hours required to process High Grade steel are associated with the furnace.

Required: (24%)

1. Determine the contribution margin per unit for each product. (9%)
2. Provide an analysis to determine the relative product profitabilities, assuming that the furnace is a bottleneck. (9%)
3. Assume that management wishes to improve profitability by increasing prices on selected products. At what price would High and Good Grades need to be offered in order to produce the same relative profitability as Regular Grade steel? (6%)