

※ 考生請注意：本試題可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. The Coffee Division of American Products is planning the 20X5 operating budget. Average operating assets of \$1,500,000 will be used during the year and unit selling prices are expected to average \$100 each. Variable costs of the division are budgeted at \$400,000, while fixed costs are set at \$250,000. The company's required rate of return is 18%.

Required: (10%)

- a. Compute the sales volume necessary to achieve a 20% ROI.
 - b. The division manager receives a bonus of 50% of residual income. What is his anticipated bonus for 20X5, assuming he achieves the 20% ROI from part (a)?
2. Better Food Company recently acquired an olive oil processing company that has an annual capacity of 2,000,000 liters and that processed and sold 1,400,000 liters last year at a market price of \$4 per liter. The purpose of the acquisition was to furnish oil for the Cooking Division. The Cooking Division needs 800,000 liters of oil per year. It has been purchasing oil from suppliers at the market price. Production costs at capacity of the olive oil company, now a division, are as follows:

Direct materials per liter	\$1.00
Direct processing labor	0.50
Variable processing overhead	0.24
Fixed processing overhead	0.40
Total	\$2.14

Management is trying to decide what transfer price to use for sales from the newly acquired company to the Cooking Division. The manager of the Olive Oil Division argues that \$4, the market price, is appropriate. The manager of the Cooking Division argues that the cost of \$2.14 should be used, or perhaps a lower price, since fixed overhead cost should be recomputed with the larger volume. Any output of the Olive Oil Division not sold to the Cooking Division can be sold to outsiders for \$4 per liter.

Required: (20%)

- a. Compute the operating income for the Olive Oil Division using a transfer price of \$4. (5%)
- b. Compute the operating income for the Olive Oil Division using a transfer price of \$2.14. (5%)
- c. What transfer price(s) do you recommend? Compute the operating income for the Olive Oil Division using your recommendation. (10%)

3. The Jarvis Corporation produces bucket loader assemblies for the tractor industry. The product has a long term life expectancy. Jarvis has a traditional manufacturing and inventory system. Jarvis is considering the installation of a just-in-time inventory system to improve its cost structure. In doing a full study using its manufacturing engineering team as well as consulting with industry JIT experts and the main vendors and suppliers of the components Jarvis uses to manufacture the bucket loader assemblies, the following incremental cost-benefit relevant information is available for analysis:

The Jarvis cost of investment capital hurdle rate is 15%.

One time cost to rearrange the shop floor to create the manufacturing cell workstations is \$275,000.

One time cost to retrain the existing workforce for the JIT required skills is \$60,000.

Anticipated defect reduction is 40%. Currently there is a cost of quality defect assessment listed as \$150,000 per year.

The setup time for each of the existing functions will be reduced by 67%. Currently the forecast for setup costs are \$225,000 per year.

Jarvis will expect to save \$200,000 per year in carrying costs as a result of having a lower inventory.

The suppliers will require a 15% premium over the current level of prices in order to position themselves to supply the material on a smaller and more frequent schedule. Currently the materials purchases are \$1,500,000 per year.

Required: (20%)

Determine whether it is in the best interest of Jarvis Corporation to install a JIT system.

4. The following data are available for Ruggles Company for the year ended September 30, 2011.

Sales:	24,000 units at \$50 each
Expected and actual production:	30,000 units
Manufacturing costs incurred:	
Variable:	\$525,000
Fixed:	\$372,000
Nonmanufacturing costs incurred:	
Variable:	\$144,800
Fixed:	\$77,400

Beginning inventories: none

Required: (25%)

- a. Determine operating income using the variable-costing approach.
- b. Determine operating income using the absorption-costing approach.
- c. Explain why operating income is not the same under the two approaches.

5. Brown Company makes watches. The fixed overhead costs for 2011 total \$324,000. The company uses direct labor-hours for fixed overhead allocation and anticipates 10,800 hours during the year for 540,000 units. An equal number of units are budgeted for each month.

During October, 48,000 watches were produced and \$28,000 was spent on fixed overhead.

Required: (15%)

- a. Determine the fixed overhead rate for 2011 based on the units of input.
 - b. Determine the fixed overhead static-budget variance for October.
 - c. Determine the production-volume overhead variance for October.
6. Wilson's Winter Woolens manufactures jackets and other wool clothing. A certain designed ski parka requires the following:

Direct materials standard 2 square yards at \$13.50 per yard

Direct manufacturing labor standard 1.5 hours at \$20.00 per hour

During the third quarter, the company made 1,500 parkas and used 3,150 square yards of fabric costing \$39,375. Direct labor totaled 2,100 hours for \$45,150.

Required: (10%)

- a. Compute the direct materials price and efficiency variances for the quarter.
- b. Compute the direct manufacturing labor price and efficiency variances for the quarter.