**Problem 20.2A**

Blaster Corporation manufacturers hiking boots. For the coming year, the company has budgeted the following costs for the production and sale of 30,000 pairs of boots:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Budgeted Costs** | **Budgeted Costs per Pair** | **Percentage of Costs Considered Variable** |
| Direct materials | $630,000 | $21 | 100% |
| Direct labor | 300,000 | 10 | 100 |
| Manufacturing overhead (fixed and variable | 720,00 | 24 | 25 |
| Selling and administrative expenses | 600,000 | 20 | 20 |
| **Totals** | **$2,250,000** | **$75** |  |

**Instructions**

1. Compute the sales price per unit that would result in a budgeted operating income of $900,000, assuming that the company produces and sells 30,000 pairs. (Hint: First compute the budgeted sales revenue needed to produce this operating income.)
2. Assuming that the company decides to sell the boots at a unit price of $121 per pair, compute the following:
3. Total fixed costs budgeted for the year.
4. Variable cost per unit.
5. The unit contribution margin.
6. The number of pairs that must be produced and sold annually to break even at a sales price of $121 per pair.

**Problem 20.6A**

Precision Systems manufacturers CD burners and currently sells 18,500 units annually to producers of laptop computers. Jay Wilson, president of the company, anticipates a 15 percent increase in the cost per unit of direct labor on January 1 of next year. He expects all other costs and expenses to remained unchanged. Wilson has asked you to assist him in developing the information he needs to formulate a reasonable product strategy for next year.

You are satisfied that volume is the primary factor affecting costs and expenses and have separated the semivariable costs into their fixed and variable segments. Beginning and ending inventories remain at a level if 1,000 units. Current plant capacity is 20,000 units.

Below are the current-year data assembled for your analysis:

Sales price per unit……………………………………………………………………………………………….. $100

Variable costs per unit:

Direct materials………………………………………………………………………………………. $10

Direct labor…………………………………………………………………………………………….. 20

Manufacturing overhead and selling and administrative expenses………. 30 60

Contribution margin per unit (40%)…………………………………………………………………… $ 40

Fixed costs………………………………………………………………………………………………………….. $390,000

Instructions

1. What increase in the selling price is necessary to cover the 15 percent increase in direct labor costs and still maintain the current contribution margin ratio of 40 percent?
2. How many units must be sold to maintain the current operating income of *$350,000* if the sales price remains at $100 and the 15 percent wage increase goes into effect? (Hint: First compute the unit contribution margin.)
3. Wilson believes that an additional $700,000 of machinery (to be depreciated at 20 percent annually) will increase present capacity (20,000 units) by 25 percent. If all units produced can be sold at the present price of $100 per unit and the wage increase goes into effect, how would the estimated operating income before capacity is increased compare with the estimated operating income after capacity is increased? Prepare schedules of estimated operating income at full capacity *before* and *after* the expansion.

**Problem 21.2A**

Crafty Tools manufactures an electric motor that it uses in several of its products. Management is considering whether to continue manufacturing the motors or to buy them from an outside source. The following information is available:

1. The company needs 10,000 motors per year. The motors can be purchased from an outside supplier at a cost of 420 per unit.
2. The unit cost of manufacturing the motors is $42, computed as follows:

Direct materials……………………………………………………………………………………………………… $ 96,000

Direct labor……………………………………………………………………………………………………………. 120,000

Factory overhead:

Variable……………………………………………………………………………………………………. 90,000

Fixed………………………………………………………………………………………………………… 114,000

Total manufacturing costs……………………………………………………………………………………. **$420,000**

Cost per unit ($420,000 / 10,000 units)………………………………………………………………… **$42**

1. Discontinuing the manufacture of motors will eliminate all the raw materials and direct labor costs but will eliminate only 75 percent of the variable factory overhead costs.
2. If the motors will be sold at its book value. Accordingly, no gain or loss will be recognized. The sale of this machinery would also eliminate $4,000 in fixed costs associated with depreciation and taxes. No other reductions in fixed factory overhead will result from discontinuing the production of motors.

Instructions

1. Prepare a schedule in the format illustrated in Exhibit 21-6 to determine the incremental cost or benefit of buying the motors from the outside supplier. Using this schedule, would you recommend that the company manufacture the motors or buy them from the outside source?
2. Assume that if the motors are purchased from the outside source, the factory space previously used to produce motors can be used to manufacture an additional 7,000 power trimmers per year. Power trimmers have an estimated contribution margin of $10 per unit. The manufacture of the additional power trimmers would have no effect on fixed factory overhead. Would this new assumption change your recommendation as to whether to make or buy the motors? In support of your conclusion, prepare a schedule showing the incremental cost or benefit of buying the motors from the outside source and using the factory space to produce additional power trimmers.

**Problem 23.1A**

Renfrow International manufactures and sells a single product. In preparing its master budget for the current quarter, the company’s controller has assembled the following information:

**Units Dollars**

Sales (budgeted)…………………………………………………………………. 150,000 $7,500,000

Finished goods inventory, beginning of quarter………………….. 38,000 975,000

Finished goods inventory, end of quarter……………………………. 28,000 ?

Cost of finished goods manufactured (assume a

Budgeted manufacturing cost of $28 per unit)………… ? ?

Renfrow International used the average cost method of pricing its inventory of finished goods.

Instructions

Compute the following budgeted quantities or dollar amounts:

1. Planned production of finished goods (in units).
2. Cost of finished goods manufactures.
3. Ending finished goods inventory. (Remember that in using the average cost method you must first compute the average cost of units available for sale.)
4. Cost of goods sold.

**Problem 23.4A**

Potter Corporation sells office supplies to government agencies. At the beginning of the current quarter, the company reports the following selected account balances:

Cash…………………………………………………………………………………………………………………………… $ 10,000

Accounts receivable ………………………………………………………………………………………………….. 200,000

Current payables……………………………………………………………………………………………………….. 85,000

Potter’s management has made the following budget estimates regarding operations for the current quarter:

Sales (estimated)………………………………………………………………………………………………………. $500,000

Total costs and expenses (estimated)………………………………………………………………………. 400,000

Debt service payment (estimated)…………………………………………………………………………… 145,000

Tax liability payment (estimated)……………………………………………………………………………. 45,000

Of Potter’s total costs and expenses, $30,000 is quarterly depreciation expense, and $20,000 represents the expiration of prepayments. The remaining $350,000 is to be financed with current payables. The company’s ending prepayments balance is expected to be the same as its beginning prepayments balance. It’s ending current payables balance is expected to be $20,000 more than its beginning balance.

All of Potter’s sales are on account. Approximately 65 percent of its sales are collected in the quarter in which they are made. The remaining 35 percent are collected in the following quarter. Because all of the company’s sales are made to government agencies, it experiences virtually no uncollectible accounts.

Potter’s minimum cash balance requirement is $10,000. Should the balance fall below this amount, management negotiates a short-term loan with a local bank. The company’s debt ratio (liabilities / assets) is currently 80 percent.

Instructions

1. Compute Potter’s budgeted cash receipts for the quarter.
2. Compute Potter’s payments of current payables budgeted for the quarter.
3. Compute Potter’s cash prepayments budgeted for the quarter.
4. Prepare Potter’s cash budget for the quarter.
5. Estimate Potter’s short-term borrowing requirements for the quarter.
6. Discuss problems Potter might encounter in obtaining short-term financing.