## Demo 7-1 ANSWER

| | A | B | C | D | Total |
|---|---|---|---|---|---|
| Sales: | $1,000 | $2,000 | $1,000 | $1,000 | |
| Variable Costs | -660 | -1,200 | -800 | -400 | |
| Contribution Margin | $340 | $800 | $200 | $600 | |
| Direct Fixed Costs | -120 | -240 | -120 | -120 | |
| Division Profit: | $220 | $560 | $80 | $480 | $1340 |
| Common Fixed Costs: | | | | | $900 |
| Operating Profit | | | | | $440 |

Each division has a positive Operating Profit. No division should be dropped.

If you drop Division C in the first year:

| | A | B | D | Total |
|---|---|---|---|---|
| Sales: | $1,000 | $2,000 | $1,000 | |
| Variable Costs: | -660 | -1,200 | -400 | |
| Fixed Costs: | -345 | -690 | -345 | |
| Operating Profit: | -$5 | $110 | $255 | $360 |

If you drop Division A in the second year:

| | B | D | Total |
|---|---|---|---|
| Sales: | $2,000 | $1,000 | |
| Variable Costs: | -1,200 | -400 | |
| Fixed Costs: | -840 | -420 | |
| Operating Profit: | -$40 | $180 | $140 |

If you drop Division B in the third year:

| | D | Total |
|---|---|---|
| Sales: | $1,000 | |
| Variable Costs: | -400 | |
| Fixed Costs: | -1,020 | |
| Operating Profit: | -$420 | -$420 |

If you drop Division D in the fourth year, then there is no fifth year.

Please send comments and corrections to me at mconstas@csulb.edu

## Demo 7-2 ANSWER

1. When you produce more inventory than you are selling, then fix costs are being treated as assets and not being expensed.

2.

| | 1995 | | 1996 | | 1997 | |
|---|---|---|---|---|---|---|
| Sales | $30,000 | | $32,000 | | $34,000 | |
| Less Var. COGS: | -15,000 | (100x150K) | -16,800 | (105x160K) | -18,700 | (110x170K) |
| Contrib. Margin | $15,000 | | $15,200 | | $15,300 | |
| Less Fixed Costs: | | | | | | |
| Fixed Manufacturing OH: | -15,000 | | -15,000 | | -15,000 | |
| Fixed S&A Expense: | 3,000 | | -3,600 | | -3,800 | |
| Operating Profit: | -$3,000 | | -$3,400 | | -$3,500 | |

3. The difference in income between full-absorption costing method and the variable costing method is due to the different treatment of the fixed factory overhead attributable to unsold units.

   1995 = $75 x 50,000 = $3,750
   1996 = $60 x 90,000 = $5,400
   1997 = $50 x 130,000 = $6,500

4. On the balance sheet check the % of inventory to sales.

## Demo 7-3 ANSWER

1. a. Absorption manufacturing cost per unit:

| | | |
|---|---|---|
| Direct Materials: | $ 4.00 | (2 lbs. @ $2) |
| Direct Labor: | 10.50 | (1.5 hrs @ $7) |
| Variable Manufacturing Overhead: | 3.00 | (1.5 hrs @ $2) |
| Fixed Manufacturing Overhead: | 4.50 | (1.5 hrs @ $3) |
| Total: | $22.00 | |

b. Variable manufacturing cost per unit:

| | | |
|---|---|---|
| Direct Materials: | $ 4.00 | (2 lbs. @ $2) |
| Direct Labor: | 10.50 | (1.5 hrs @ $7) |
| Variable Manufacturing Overhead: | 3.00 | (1.5 hrs @ $2) |
| Total: | $17.50 | |

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2. Absorption Costing Income Statement:

| | | |
|---|---|---|
| Revenue: | $800,000 | (20,000 x $40) |
| Less Cost of Goods Sold: | -455,000 | ((20,000 x $22) + 10,000 + 5000) |
| Gross Margin: | $345,000 | |
| Less Selling & Administrative Expenses: | -280,000 | [200,000 + (.1 x 800,000)] |
| Operating Profit: | $65,000 | |

3. Variable Costing Income Statement:

| | | |
|---|---|---|
| Revenue | $800,000 | (20,000 x $40) |
| Less Variable Costs: | | |
| Variable Cost of Goods Sold | -355,000 | [(20,000 x 17.50) + 5,000] |
| Variable Selling and Administrative Expenses | -80,000 | (800,000 x .1) |
| Contribution Margin: | $365,000 | |
| Less Fixed Costs: | | |
| Fixed Selling and Administrative Expenses: | -200,000 | |
| Fixed Manufacturing Overhead: | -122,500 | [(25,000 x 4.5) + 10,000] |
| Operating Profit: | $42,500 | |

4. Unsold Units x Fixed Manufacturing Overhead per Unit:

5,000 x (4.5) = $22,500

## Demo 7-4 ANSWER

| | A | B | C |
|---|---|---|---|
| Sales | $1,500 | $2,800 | $1,050 |
| Less Variable Costs: | -1,000 | -2,200 | -1,550 |
| Contribution Margin | $500 | $600 | -$500 |
| Less Fixed Costs: | -100 | -500 | -150 |
| Operating Profit: | $400 | $100 | -$650 |

Product C has a negative contribution margin, so the firm should drop C.

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