

**Exercise 8-25**  
Variable Costing and  
Cost-Volume-Profit Analysis  
(LO 8-5)



**Exercise 8-26**  
Absorption versus Variable  
Costing  
(LO 8-1)

Refer to the data given in the preceding exercise for Bianca Bicycle Company.

**Required:**

1. Prepare a cost-volume-profit graph for the company. (Scale the vertical axis in millions of dollars.)
2. Calculate Bianca Bicycle Company's break-even point in units, and show the break-even point on the CVP graph.
3. Explain why variable costing is more compatible with your CVP graph than absorption costing would be.

Information taken from Allied Pipe Company's records for the most recent year is as follows:

Direct material used .....	\$340,000
Direct labor .....	160,000
Variable manufacturing overhead .....	75,000
Fixed manufacturing overhead .....	125,000
Variable selling and administrative costs .....	70,000
Fixed selling and administrative costs .....	37,000

**Required:**

1. Assuming Allied Pipe Company uses absorption costing, compute the inventoriable costs for the year.
2. Compute the year's inventoriable costs using variable costing.

(CMA, adapted)

Visit the website for one of the following companies, or a different company of your choosing.

Coca-Cola	<a href="http://www.coca-cola.com">www.coca-cola.com</a>
Bridgestone	<a href="http://www.bridgestone.com">www.bridgestone.com</a>
Motorola	<a href="http://www.motorola.com">www.motorola.com</a>
Casio	<a href="http://www.casio.com">www.casio.com</a>
Toyota	<a href="http://www.toyota.com">www.toyota.com</a>
Xerox	<a href="http://www.xerox.com">www.xerox.com</a>

**Required:** Read about the company's products and operations. Discuss the pros and cons of absorption and variable costing as the basis for product costing if the firm uses cost-based pricing.

The following costs were incurred by Osaka Metals Company to maintain the quality of its products. (The *yen* is the national currency of Japan.)

1. Operating an X-ray machine to detect faulty welds, 110,000 *yen*
2. Repairs of products sold last year, 116,000 *yen*
3. Cost of rewelding faulty joints, 17,000 *yen*
4. Cost of sending machine operators to a three-week training program so they could learn to use new production equipment with a lower defect rate, 18,100 *yen*

**Required:** Classify each of these costs as a prevention, appraisal, internal failure, or external failure cost.

San Mateo Circuitry manufactures electrical instruments for a variety of purposes. The following costs related to maintaining product quality were incurred in May.

Training of quality-control inspectors .....	\$21,000
Tests of instruments before sale .....	30,000
Inspection of electrical components purchased from outside suppliers .....	12,000
Costs of rework on faulty instruments .....	9,000
Replacement of instruments already sold, which were still covered by warranty .....	16,500
Costs of defective parts that cannot be salvaged .....	6,100

**Required:** Prepare a quality-cost report similar to the report shown in Exhibit 8-6.

**Exercise 8-27**  
Absorption and Variable  
Costing: Use of Internet  
(LO 8-1, 8-6)

**Exercise 8-28**  
Quality Costs  
(LO 8-7)



**Exercise 8-29**  
Quality-Cost Report  
(LO 8-7)



### Problem 17-26

Service Department Cost Allocation  
(LO 17-1)

- Overhead rate per hour, etching: \$10.602 (rounded)
- Maintenance department costs allocated to finishing: \$87,111

# Ex

**Required:** Use dual cost allocation in conjunction with each of the following methods to allocate Tampa Instrument Company's service department costs: (1) direct method and (2) step-down method.

Celestial Artistry Company is developing departmental overhead rates based on direct-labor hours for its two production departments, Etching and Finishing. The Etching Department employs 20 people and the Finishing Department employs 80 people. Each person in these two departments works 2,000 hours per year. The production-related overhead costs for the Etching Department are budgeted at \$200,000, and the Finishing Department costs are budgeted at \$320,000. Two service departments, Maintenance and Computing, directly support the two production departments. These service departments have budgeted costs of \$48,000 and \$250,000, respectively. The production departments' overhead rates cannot be determined until the service departments' costs are allocated. The following schedule reflects the use of the Maintenance Department's and Computing Department's output by the various departments.

Service Department	Using Department			
	Maintenance	Computing	Etching	Finishing
Maintenance (maintenance hours) .....	0	1,000	1,000	8,000
Computing (minutes) .....	240,000	0	840,000	120,000

**Required:**

- Use the direct method to allocate service department costs. Calculate the overhead rates per direct-labor hour for the Etching Department and the Finishing Department.
- Use the step-down method to allocate service department costs. Allocate the Computing Department's costs first. Calculate the overhead rates per direct-labor hour for the Etching Department and the Finishing Department.

(CMA, adapted)

### Problem 17-27

Joint Costs  
(LO 17-4, 17-5)

- CBL, allocation of joint cost: \$225,000
- MSB, net realizable value: \$200,000

Snake River Sawmill manufactures two lumber products from a joint milling process. The two products developed are mine support braces (MSB) and unseasoned commercial building lumber (CBL). A standard production run incurs joint costs of \$300,000 and results in 60,000 units of MSB and 90,000 units of CBL. Each MSB sells for \$2, and each unit of CBL sells for \$4.

**Required:**

- Calculate the amount of joint cost allocated to commercial building lumber (CBL) on a physical-units basis.
- Calculate the amount of joint cost allocated to the mine support braces (MSB) on a relative-sales-value basis.
- Assume the commercial building lumber is not marketable at split-off but must be further planed and sized at a cost of \$200,000 per production run. During this process, 10,000 units are unavoidably lost; these spoiled units have no value. The remaining units of commercial building lumber are saleable at \$10 per unit. The mine support braces, although saleable immediately at the split-off point, are coated with a tarlike preservative that costs \$100,000 per production run. The braces are then sold for \$5 each. Using the net-realizable-value basis, compute the completed cost assigned to each unit of commercial building lumber.
- If Snake River Sawmill chose not to process the mine support braces beyond the split-off point, the contribution from the joint milling process would increase or decrease by what amount?
- Did you use the joint cost allocation results in answering requirement (4)? If so, how? Why did you use or not use the allocation results?

(CMA, adapted)