

EXERCISES SECTION 4

1. A number of costs that are commonly allocated are listed in the following table followed by two alternative cost allocation bases.

Cost Description	Allocation Base Alternatives	
Cafeteria costs	Direct labor costs	Number of employees
Computer system costs	Number of departments	Amount of computer time used
Indirect labor costs	Direct labor hours	Number of supervisors
Indirect materials	Direct labor hours	Direct material dollars
Factory rent	Number of departments	Square footage
Fringe benefits costs	Number of departments	Number of employees
Housekeeping costs	Square footage	Number of employees
Joint costs	Number of joint products	Sales value at split-off
Maintenance costs	Machine hours	Number of employees
Personnel department costs	Number of employees	Number of departments

Required:

For each cost listed, circle the cost **allocation base** that you believe would be *more appropriate* for allocating the cost.

2. Martin's is a store with **3 departments**: Appliances, Tools, and Home Improvements. The company expects to incur the following indirect costs related to its operations:

Store manager's salary
Store supplies
Electric bill
Clerical staff salaries
Payroll taxes
Office supplies
Water bill
Sewer bill
Medical insurance
Vacation pay

Required:

- 1) Organize the indirect costs into **3 cost pools**: *Store Administration*, *Utilities*, and *Fringe Benefit Costs*, assuming that each department is a cost object.
- 2) Identify an **appropriate cost driver** for each cost pool.

3. Jefferson Company expects to incur **\$ 620,000** in manufacturing **overhead costs** during 2024. Other budget information follows:

	Direct labor hours	Machine hours
Department A	18,000	7,500
Department B	6,000	9,000
Department C	22,000	11,500

Required:

- 1) Use **direct labor hours** as the cost driver to compute the allocation rate. Determine the amount of budgeted overhead cost for each department.
- 2) Use **machine hours** as the cost driver to compute the allocation. Determine the amount of budgeted overhead cost for each department.
- 3) Assume that Department A manufactured a product that required **180 direct labor hours** and **95 machine hours**. If overhead is allocated based on direct labor hours, how much overhead would be allocated to this product?
- 4) Assume that Department A manufactured a product that required 180 direct labor hours and 95 machine hours. If overhead is allocated based on machine hours, how much overhead would be allocated to this product?

4. Madison Manufacturing anticipates incurring **\$720,000** in manufacturing overhead during the upcoming year. The company produces **2 products, X and Y**, and has compiled the following budget information:

	Product X	Product Y
<i>Number of units produced</i>	12,000	6,000
Direct labor hours	28,000	7,000
Machine hours	18,000	36,000

Required:

- 1) Use **direct labor hours** as the cost driver to compute the allocation rate. Determine the amount of budgeted overhead to be allocated to each unit of product X.
 - 2) Use **machine hours** as the cost driver to compute the allocation rate. Determine the amount of budgeted overhead to be allocated to each unit of product X.
 - 3) How should Madison determine whether to use machine hours or direct labor hours as the appropriate cost driver for allocating overhead?
5. The management accountant at Lawrence Manufacturing Co. has prepared the following **cost estimates** for producing **3,000 units** of a custom product:

Cost Component	Estimated Cost
Direct Materials	\$12,000
Direct Labor (1 hour per unit)	\$6,000
Unit-level Support Costs	\$9,000
Batch-level Support Costs	\$4,000
Product-level Support Costs	\$2,500
Facility-level Support Costs	\$6,500

The company has identified **direct labor hours** as the most suitable cost driver for allocating manufacturing overhead.

Required:

- 1) Calculate the **predetermined overhead rate**.
- 2) Compute the **estimated total cost per unit** of the product.
- 3) Explain why companies use a **predetermined overhead rate** instead of assigning actual overhead costs.

6. Blue Ridge Farms processes livestock to produce **3 joint meat products**: *ham*, *ribs*, and *tenderloin*. Each production batch incurs **\$120,000** in joint processing costs. From each batch, the following quantities are obtained:

- Ham: 12,000 pounds
- Ribs: 20,000 pounds
- Tenderloin: 8,000 pounds

Tenderloin is sold at \$4.00 per pound. Ham and ribs are sold at the split-off point for \$3.75 per pound and \$3.25 per pound, respectively.

Required:

- 1) Allocate Blue Ridge's joint costs using *pounds produced* as the **allocation base**.
- 2) Allocate Blue Ridge's joint costs using the relative *sales value* at **split-off method**.

- 3) Assume that tenderloin is processed further after the split-off point at an additional cost of **\$5,000**, and joint costs are allocated based on pounds produced. What is the **total cost assigned** to tenderloin?