

Cost accounting answers



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CHAPTER 4 JOB COSTING 4-1 Cost pool--a grouping of individual indirect cost items. Cost tracing--the assigning of direct costs to the chosen cost object.

Cost allocation--the assigning of indirect costs to the chosen cost object.

Cost-allocation base--a factor that links in a systematic way an indirect cost or group of indirect costs to cost objects. 4-2 In a job-costing system, costs are assigned to a distinct unit, batch, or lot of a product or service.

In a process-costing system, the cost of a product or service is obtained by using broad averages to assign costs to masses of identical or similar units.

4-3 An advertising campaign for Pepsi is likely to be very specific to that individual client. Job costing enables all the specific aspects of each job to be identified. In contrast, the processing of checking account withdrawals is similar for many customers. Here, process costing can be used to compute the cost of each checking account withdrawal.

4-4 The seven steps in job costing are: (1) identify the job that is the chosen cost object, (2) identify the direct costs of the job, (3) select the cost-allocation bases to use for allocating indirect costs to the job, (4) identify the indirect costs associated with each cost-allocation base, (5) compute the rate per unit of each cost-allocation base used to allocate indirect costs to the job, (6) compute the indirect costs allocated to the job, and (7) compute the total cost of the job by adding all direct and indirect costs assigned to the job. 4-5 Major cost

objects that managers focus on in companies using job costing are a product such as a specialized machine, a service such as a repair job, a project such as running the Expo, or a task such as an advertising campaign. 4-6 Three major source documents used in job-costing systems are (1) job cost record or job cost sheet, a document that records and accumulates all costs

assigned to a specific job, starting when work begins (2) materials requisition record, a document that contains information about the cost of direct materials used on a specific job and in a specific department; and (3) labor-time sheet, a document that contains information about the amount of labor time used for a specific job in a specific department. -7The main advantages of using computerized source documents for job cost records are the accuracy of the records and the ability to provide managers with instantaneous feedback to help control job costs. 4-8Two reasons for using an annual budget period are a. The numerator reason--the longer the time period, the less the influence of seasonal patterns in overhead costs, and b. The denominator reason--the longer the time period, the less the effect of variations in output levels or quantities of the cost-allocation bases on the allocation of fixed costs. -9Actual costing and normal costing differ in their use of actual or budgeted indirect cost rates:

Costing	Direct-cost rates	Indirect-cost rates
Actual Costing	Actual rates	Actual rates
Normal Costing	Actual rates	Budgeted rates

Each costing method uses the actual quantity of the direct-cost input and the actual quantity of the cost-allocation base. 4-10A house construction firm can use job cost information (a) to determine the profitability of individual jobs, (b) to assist in bidding on future jobs, and (c) to evaluate professionals who are in charge of managing individual jobs. 4-11The statement is false. In a normal costing system, the Manufacturing Overhead Control account will not, in general, equal the amounts in the Manufacturing Overhead Allocated account.

The Manufacturing Overhead Control account aggregates the actual overhead costs incurred while Manufacturing Overhead Allocated allocates overhead costs to jobs on the basis of a budgeted rate times the actual quantity of the cost-allocation base. Underallocation or overallocation of indirect (overhead) costs can arise because of (a) the Numerator reason--the actual overhead costs differ from the budgeted overhead costs, and (b) the Denominator reason--the actual quantity used of the allocation base differs from the budgeted quantity. 4-12 Debit entries to Work-in-Process Control represent increases in work in process.

Examples of debit entries under normal costing are (a) direct materials used (credit to Materials Control), (b) direct manufacturing labor billed to job (credit to Wages Payable Control), and (c) manufacturing overhead allocated to job (credit to Manufacturing Overhead Allocated). 4-13 Alternative ways to make end-of-period adjustments to dispose of underallocated or overallocated overhead are as follows: (i) Proration based on the total amount of indirect costs allocated (before proration) in the ending balances of work in process, finished goods, and cost of goods sold. ii) Proration based on total ending balances (before proration) in work in process, finished goods, and cost of goods sold. iii) Year-end write-off to Cost of Goods Sold. iv) The adjusted allocation rate approach that restates all overhead entries using actual indirect cost rates rather than budgeted indirect cost rates. 4-14 A company might use budgeted costs rather than actual costs to compute direct labor rates because it may be difficult to trace direct labor costs to jobs as they are completed (for example, because bonuses are only known at the end of the year). -15 Modern technology of electronic data interchange

(EDI) is helpful to managers because it ensures that a purchase order is transmitted quickly and accurately to suppliers with minimum paperwork and costs. 16. (10 min) Job order costing, process costing. a. Job costingl. Job costing b. Process costingm. Process costing c. Job costingn. Job costing d. Process costingo. Job costing e. Job costingp. Job costing f. Process costingq. Job costing g. Job costingr. Process costing h. Job costing (but some process costing)s. Job costing i.

Process costingt. Process costing j. Process costingu. Job costing k. Job costing 4-17(20 min.)Actual costing, normal costing, accounting for manufacturing overhead. 1. [pic]=[pic] =[pic]= 1. 80 or 180% [pic]=[pic] =[pic]= 1. 9 or 190% 2. Costs of Job 626 under actual and normal costing follow: ActualNormal CostingCosting Direct materials\$ 40, 000\$ 40, 000 Direct manufacturing labor costs30, 00030, 000 Manufacturing overhead costs \$30, 000 (1. 90; \$30, 000 (1. 80 57, 000 54, 000 Total manufacturing costs of Job 626\$127, 000\$124, 000 3. pic]=[pic] ([pic] =\$1, 450, 000 (1. 80 =\$2, 610, 000 [pic]=[pic] - [pic] =\$2, 755, 000 (\$2, 610, 000 = \$145, 000 There is no under- or overallocated overhead under actual costing because overhead is allocated under actual costing by multiplying actual manufacturing labor costs and the actual manufacturing overhead rate. This, of course equals the actual manufacturing overhead costs. All actual overhead costs are allocated to products. Hence, there is no under- or overallocated overhead. 4-18(20 -30 min.) Job costing, normal and actual costing. 1. pic]=[pic] = [pic] =\$50 per direct labor-hour [pic]=[pic] = [pic] =\$40 per direct labor-hour These rates differ because both the numerator and the denominator in the two calculations are different—one based on

budgeted numbers and the other based on actual numbers. | 2a. | Laguna | Mission | | | Model | Model | | Normal costing | | | Direct costs | | | Direct materials |\$106, 760 |\$127, 550 | | Direct labor | 36, 950 | 41, 320 | | | 143, 710 | 168, 870 | | Indirect costs | | | Assembly support (\$50 (960; \$50 (1, 050) | 48, 000 | 52, 500 | | Total costs |\$191, 710 |\$221, 370 | | 2b.

Actual costing | | | Direct costs | | | Direct materials |\$106, 760 |\$127, 550 | | Direct labor | 36, 950 | 41, 320 | | | 143, 710 | 168, 870 | | Indirect costs | | | Assembly support (\$40 (960; \$40 (1, 050) | 38, 400 | 42, 000 | | Total costs |\$182, 110 |\$210, 870 |

3. Normal costing enables Amesbury to report a job cost as soon as the job is completed, assuming that both the direct materials and direct labor costs are known at the time of use. Once the 960 direct labor-hours are known for the Laguna Model (June 2011), Amesbury can compute the \$191, 710 cost figure using normal costing. Amesbury can use this information to manage the costs of the Laguna Model job as well as to bid on similar jobs later in the year. In contrast, Amesbury has to wait until the December 2011 year-end to compute the \$182, 110 cost of the Laguna Model using actual costing.

Although not required, the following overview diagram summarizes Amesbury Construction's job-costing system. [pic] 4-19(10 min.)Budgeted manufacturing overhead rate, allocated manufacturing overhead. 1. Budgeted manufacturing overhead rate = [pic] = [pic] = \$24 per machine-hour | 2. | Manufacturing | = | Actual | (| Budgeted manufacturing | | | overhead | | machine-hours | | overhead rate | | | | = 170, 000 ? \$24 = \$4, 080, 000 3.

Since manufacturing overhead allocated is greater than the actual manufacturing overhead costs, Gammara overallocated manufacturing overhead: Manufacturing overhead allocated \$4,080,000 Actual manufacturing overhead costs 4,050,000 Overallocated manufacturing overhead \$30,000 4-20 (20-30 min.) Job costing, accounting for manufacturing overhead, budgeted rates. 1. An overview of the product costing system is [pic] Budgeted manufacturing overhead divided by allocation base: Machining overhead: [pic] = \$36 per machine-hour Assembly overhead: [pic] = 180% of direct manuf. labor costs 2. Machining department, 2,000 hours (\$36 \$72,000 Assembly department, 180% (\$15,000 27,000 Total manufacturing overhead allocated to Job 494 \$99,000 3.

Machining Assembly Actual manufacturing overhead \$2,100,000 \$3,700,000 Manufacturing overhead allocated, \$36 (55,000 machine-hours 1,980,000 — 180% (\$2,200,000 — 3,960,000 Underallocated (Overallocated) \$120,000 \$ (260,000) 4-21 (20(25 min.) Job costing, consulting firm. 1.

Budgeted indirect-cost rate for client support can be calculated as follows:

Budgeted indirect-cost rate = $\$13,600,000 \div \$5,312,500 = 256\%$ of professional labor costs 2. At the budgeted revenues of \$21,250,000

Taylor's operating income of \$2,337,500 equals 11% of revenues. Markup rate = $\$21,250,000 \div \$5,312,500 = 400\%$ of direct professional labor costs 3. Budgeted costs

Direct costs: Director, \$198 (4 \$ 792 Partner, \$101 (171, 717 Associate, \$49 (422, 058 Assistant, \$36 (153 5, 508 \$10, 075 Indirect costs: Consulting support, 256% (\$10, 075 25, 792 Total costs \$35, 867 As calculated in requirement 2, the bid price to earn an 11% income-to-revenue margin is

400% of direct professional costs. Therefore, Taylor should bid 4 (\$10, 075 = \$40, 300 for the Red Rooster job. Bid price to earn target operating income-to-revenue margin of 11% can also be calculated as follows: Let R = revenue to earn target income $R - 0.11R = \$35,867$ $0.89R = \$35,867$ $R = \$35,867 \div 0.89 = \$40,300$ Or Direct costs \$10, 075 Indirect costs 25, 792

Operating income $(0.11 \times \$40,300) = 4,433$ Bid price \$40, 300 4-22(15-20 min.)Time period used to compute indirect cost rates. 1. | | Quarter | | | 1 | 2 | 3 | 4 | Annual | |(1) Pools sold | 700 | 500 | 150 | 150 | 1, 500 | |(2) Direct manufacturing labor hours (0. 5 (| 350 | 250 | 75 | 75 | 750 | Row 1) | | | | | | (3) Fixed manufacturing overhead costs |\$10, 500 |\$10, 500 |\$10, 500 |\$10, 500 |\$42, 000 | |(4) Budgeted fixed manufacturing overhead |\$30 |\$42 |\$140 |\$140 |\$56 | | rate per direct manufacturing labor hour | | | | | | |(\$10, 500 (Row 2) | | | | | | Budgeted Costs Based on Quarterly | | | Manufacturing Overhead Rate | | | 2nd Quarter | 3rd Quarter | | Direct material costs (\$7. 0 (500 pools; 150 pools) |\$ 3, 750 |\$ 1, 125 | | Direct manufacturing labor costs | 4, 000 | 1, 200 | |(\$16 (250 hours; 75 hours) | | | Variable manufacturing overhead costs | 3, 000 | 900 | |(\$12 (250 hours; 75 hours) | | | Fixed manufacturing overhead costs | 10, 500 | 10, 500 | |(\$42 (250 hours; \$140 ? 5 hours) | | | Total manufacturing costs |\$21, 250 |\$13, 725 | | Divided by pools manufactured each quarter | ? 500 | ? 150 | | Manufacturing cost per pool |\$ 42. 50 |\$ 91. 50 | 2. | | Budgeted Costs Based on Annual Manufacturing | | | Overhead Rate | | | 2nd Quarter | 3rd Quarter | | Direct material costs (\$7. 0 (500 pools; 150 pools) |\$ 3, 750 |\$1, 125 | | Direct manufacturing labor costs | 4, 000 | 1, 200 | |(\$16 (250 hours; 75 hours) | | | Variable manufacturing overhead costs | 3, 000 | 900 | |(\$12 (250 hours;

75 hours) | | | Fixed manufacturing overhead costs | 14, 000 | 4, 200 | |(\$56
 (250 hours; 75 hours) | | | Total manufacturing costs |\$24, 750 |\$7, 425 | |
 Divided by pools manufactured each quarter | (500 | (150 | | Manufacturing
 cost per pool |\$ 49. 50 |\$49. 50 | 3. | | 2nd Quarter | 3rd Quarter | | Prices
 based on quarterly budgeted manufacturing overhead rates calculated in |
 \$55. 25 |\$118. 5 | | requirement 1 | | | |(\$42. 50 (130%; \$91. 50 (130%) | | |
 | Price based on annual budgeted manufacturing overhead rates calculated
 in |\$64. 35 |\$64. 35 | | requirement 2 | | | |(\$49. 50 (130%; \$49. 50 (130%) |
 | |

Splash should use the budgeted annual manufacturing overhead rate because capacity decisions are based on longer annual periods rather than quarterly periods. Prices should not vary based on quarterly fluctuations in production. Splash could vary prices based on market conditions and demand for its pools. In this case, Splash would charge higher prices in quarter 2 when demand for its pools is high. Pricing based on quarterly budgets would cause Splash to do the opposite—to decrease rather than increase prices!

4-23(10-15 min.) Accounting for manufacturing overhead.
 1. Budgeted manufacturing overhead rate= [pic] = \$30 per machine-hour
 2. Work-in-Process Control 7, 350, 000 Manufacturing Overhead Allocated 7, 350, 000 (245, 000 machine-hours (\$30 per machine-hour = \$7, 350, 000)
 3. 7, 350, 000- \$7, 300, 000 = \$50, 000 overallocated, an insignificant amount of actual manufacturing overhead costs \$50, 000 ? \$7, 300, 000 = 0.68%.
 Manufacturing Overhead Allocated 7, 350, 000 Manufacturing Department Overhead Control 7, 300, 000 Cost of Goods Sold 50, 000
 4-24(35(45 min.) Job costing, journal entries. Some instructors may also want

to assign Exercise 4-25. It demonstrates the relationships of the general ledger to the underlying subsidiary ledgers and source documents. 1. An overview of the product costing system is: 2. & 3. This answer assumes COGS given of \$4, 020 does not include the writeoff of overallocated manufacturing overhead. | 2. (1) Materials Control | 800 | | | Accounts Payable Control | | 800 | | |(2) Work-in-Process Control | 710 | | | Materials Control | | 710 | | |(3) Manufacturing Overhead Control | 100 | | | Materials Control | | 100 | | |(4) Work-in-Process Control | 1, 300 | | | Manufacturing Overhead Control | 900 | | | Wages Payable Control | | 2, 200 | | |(5) Manufacturing Overhead Control | 400 | | | Accumulated Depreciation-- buildings and | | | | manufacturing equipment | | 400 | | |(6) Manufacturing Overhead Control | 550 | | | Miscellaneous accounts | | 550 | | |(7) Work-in-Process Control | 2, 080 | | | Manufacturing Overhead Allocated | | 2, 080 | | |(1. 60 (\$1, 300 = \$2, 080) | | | |(8) Finished Goods Control | 4, 120 | | | Work-in-Process Control | 4, 120 | | |(9) Accounts Receivable Control (or Cash) | 8, 000 | | | Revenues | | 8, 000 | | |(10) Cost of Goods Sold | 4, 020 | | | Finished Goods Control | | 4, 020 | | |(11) Manufacturing Overhead Allocated | 2, 080 | | | Manufacturing Overhead Control | | 1, 950 | | | Cost of Goods Sold | | 130 | 3. | Materials Control | | Bal. /1/2011 | 100 |(2) Work-in-Process Control (Materials used) | | |(1) Accounts Payable Control | |(3) Manufacturing Overhead Control (Materials | 710 | |(Purchases) | 800 | used) | | | | 100 | | Bal. 12/31/2011 | 90 | | | Work-in-Process Control | | Bal. /1/2011 | 60 |(8) Finished Goods Control (Goods completed) | | |(2) Materials Control (Direct | | | 4, 120 | | materials) | 710 | | | |(4) Wages Payable Control (Direct | | | | manuf. labor) | | | |(7) Manuf. Overhead Allocated | 1, 300 | | | | | | 2, 080 | | | Bal. 2/31/2011 | 30 | | | Finished Goods Control | | Bal.

1/1/2011 | 500 | (10) Cost of Goods Sold | 4, 020 | (8) WIP Control | | | | |
 (Goods completed) | 4, 120 | | | | Bal. 12/31/2011 | 600 | | | Cost of Goods
 Sold | (10) Finished Goods Control (Goods | (11) Manufacturing Overhead
 Allocated (Adjust | | | sold) | 4, 020 | for overallocation) | | | | | 130 | | Bal.
 12/31/2011 | 3, 890 | | | | Manufacturing Overhead Control | | (3) Materials
 Control (Indirect materials) | (11) To close | 1, 950 | (4) Wages Payable
 Control (Indirect manuf. | 100 | | | | labor) | | | | (5) Accum. Deprn.

Control (Depreciation) | 900 | | | | (6) Accounts Payable Control | | | | |
 (Miscellaneous) | 400 | | | | | | | | 550 | | | | Bal. | 0 | | | Manufacturing
 Overhead Allocated | (11) To close | 2, 080 | (7) Work-in-Process Control
 (Manuf. overhead | | | | | allocated) | 2, 080 | | | | Bal. | 0 | 4-25(35 minutes)

Journal entries, T-accounts, and source documents. 1. i. Direct Materials
 Control 124, 000 Accounts Payable Control 124, 000 Source Document:
 Purchase Invoice, Receiving Report Subsidiary Ledger: Direct Materials
 Record, Accounts Payable ii. Work in Process Control a 122, 000 Direct
 Materials Control 122, 000

Source Document: Material Requisition Records, Job Cost Record Subsidiary
 Ledger: Direct Materials Record, Work-in-Process Inventory Records by Jobs
 iii. Work in Process Control 80, 000 Manufacturing Overhead Control 54, 500

Wages Payable Control 134, 500 Source Document: Labor Time Sheets, Job
 Cost Records Subsidiary Ledger:, Manufacturing Overhead Records,
 Employee Labor Records, Work-in-Process Inventory Records by Jobs iv.

Manufacturing Overhead Control 129, 500 Salaries Payable Control 20, 000
 Accounts Payable Control 9, 500 Accumulated Depreciation Control 30, 000
 Rent Payable Control 70, 000 Source Document: Depreciation Schedule, Rent

Schedule, Maintenance wages due, Invoices for miscellaneous factory overhead items
 Subsidiary Ledger: Manufacturing Overhead Records v.

Work in Process Control 200,000 Manufacturing Overhead Allocated 200,000
 (\$80,000 [pic] \$2.50) Source Document: Labor Time Sheets, Job Cost Record
 Subsidiary Ledger: Work-in-Process Inventory Records by Jobs vi.

Finished Goods Control 387,000 Work in Process Control 387,000 Source
 Document: Job Cost Record, Completed Job Cost Record Subsidiary Ledger:
 Work-in-Process Inventory Records by Jobs, Finished Goods Inventory

Records by Jobs vii. Cost of Goods Sold 432,000 Finished Goods Control 432,000
 Source Document: Sales Invoice, Completed Job Cost Record Subsidiary Ledger:
 Finished Goods Inventory Records by Jobs viii.

Manufacturing Overhead Allocated 200,000

Manufacturing Overhead Control (\$129,500 + \$54,500) 184,000 Cost of Goods Sold 16,000
 Source Document: Prior Journal Entries ix. Administrative Expenses 7,000
 Marketing Expenses 120,000 Salaries Payable Control 30,000 Accounts Payable Control 90,000
 Accumulated Depreciation, Office Equipment 7,000 Source Document: Depreciation Schedule,
 Marketing Payroll Request, Invoice for Advertising, Sales Commission Schedule.

Subsidiary Ledger: Employee Salary Records, Administration Cost Records, Marketing Cost Records.
 a Materials used = [pic] + Purchases - [pic] [pic]

b [pic] = [pic] + [pic] - [pic] [pic] c Cost of goods sold = [pic] + [pic] - [pic]

[pic] 2. T-accounts Direct Materials Control | | Bal. 1/1/2011 | 9,000 | (2)

Work-in-Process Control (Materials used) | | (1) Accounts Payable Control (Purchases) | | | 122,000 | | | 124,000 | | | Bal. 12/31/2011 | 11,000 | | |

Work-in-Process Control | | Bal. 1/1/2011 | 6,000 | (6) Finished Goods Control

(Cost of goods | | |(2) Materials Control | | manufactured) | | |(Direct materials used) | 122, 000 | | 387, 000 | |(3) Wages Payable Control (Direct manuf. labor)| | | |(5) Manuf.

Overhead Allocated | 80, 000 | | | | | | | | 200, 000 | | | | Bal. 12/31/2011 | 21, 000 | | | | Finished Goods Control | | Bal. 1/1/2011 | 69, 000 |(7) Cost of Goods Sold | 432, 000 | |(6) WIP Control | | | | |(Cost of goods manuf.) | 387, 000 | | | | Bal. 2/31/2011 | 24, 000 | | | | Cost of Goods Sold | |(7) Finished Goods Control (Goods sold) | |(8) Manufacturing Overhead Allocated (Adjust | | | 432, 000 | for overallocation) | | | | | 16, 000 | | | | | Manufacturing Overhead Control | |(3) Wages Payable Control | |(8) To close | 184, 000 | | (Indirect manuf. labor) | 54, 500 | | | |(4) Salaries Payable Control (Maintenance) | | | | |(4) Accounts Payable Control (Miscellaneous) | 20, 000 | | | |(4) Accum. Deprn.

Control (Depreciation) | | | | |(4) Rent Payable Control (Rent) | 9, 500 | | | | | | | | 30, 000 | | | | | | | | 70, 000 | | | | Bal. | 0 | | | | Manufacturing Overhead Allocated | |(8) To close | 200, 000 |(5) Work-in-Process Control (Manuf. verhead | | | | allocated) | | | | | 200, 000 | | | | Bal. | 0 | 4-26(45 min.)Job

costing, journal entries. Some instructors may wish to assign Problem 4-24. It demonstrates the relationships of journal entries, general ledger, subsidiary ledgers, and source documents. 1. An overview of the product-costing system is 2. Amounts in millions. (1) Materials Control | 150 | | | Accounts Payable Control | | 150 | |(2) Work-in-Process Control | 145 | | | Materials Control | | 145 | |(3) Manufacturing Department Overhead Control | 10 | | | Materials Control | | 10 | |(4) Work-in-Process Control | 90 | | | Wages Payable Control | | 90 | |(5) Manufacturing Department Overhead Control | 30 | | |

Wages Payable Control | | 30 | |(6) Manufacturing Department Overhead Control | 19 | | | Accumulated Depreciation | | 19 | |(7) Manufacturing Department Overhead Control | 9 | | | Various liabilities | | 9 | |(8) Work-in-Process Control | 63 | | | Manufacturing Overhead Allocated | | 63 | |(9) Finished Goods Control | 294 | | | Work-in-Process Control | | 294 | |(10a) Cost of Goods Sold | 292 | | | Finished Goods Control | | 292 | |(10b) Accounts Receivable Control (or Cash) | 400 | | | Revenues | | 400 | The posting of entries to T-accounts is as follows: | Materials Control | | Work-in-Process Control | | Bal 12 |(2) 145 | | Bal. |(9) 294 | | | |(2) 145 | | | | |(4) 90 | | | | | (8) 63 | | |(1) 150 |(3) 10 | | | | Bal. 7 | | | | | | | | | Bal. | | | Finished Goods Control | | Cost of Goods Sold | | Bal. 6 |(10a) 292 | |(10a) 292 | | |(9) 294 | | |(11) 5 | | | Bal. 8 | | | | | Manufacturing Department | | | Overhead Control | | Manufacturing Overhead Allocated | |(3) 10 |(11) 68 | |(11) 63 |(8) 63 | |(5) 30 | | | | |(6) 19 | | | | |(7) 9 | | | | Accounts Payable Control | | Wages Payable Control | | |(1) 150 | | |(4) 90 | | | | |(5) 30 | | Accumulated Depreciation | | Various Liabilities | | |(6) 19 | | |(7) 9 | Accounts Receivable Control | | Revenues | |(10b) 400 | | | |(10b) 400 | | | | | The ending balance of Work-in-Process Control is \$6. 3. (11) Manufacturing Overhead Allocated 63 Cost of Goods Sold 5 Manufacturing Department Overhead Control 68 Entry posted to T-accounts in Requirement 2. 4-27(15 min.) Job costing, unit cost, ending work in progress. 1. Direct manufacturing labor rate per hour |\$26 | | | Manufacturing overhead cost allocated |\$20 | | | per manufacturing labor-hour | | | | Job M1 | Job M2 | | Direct manufacturing labor costs |\$273, 000 |\$208, 000 | | Direct manufacturing labor hours (\$273, 000[pic]\$26; | 10, 500 | 8, 000 | |\$208, 000[pic]\$26) | | | | Manufacturing

overhead cost allocated (10, 500 [pic] \$20; |\$210, 000 |\$160, 000 | | 8, 000 [pic] \$20) | | | | | | Job Costs May 2011 | Job M1 | Job M2 | | Direct materials |\$ 78, 000 |\$ 51, 000 | | Direct manufacturing labor | 273, 000 | 208, 000 | | Manufacturing overhead allocated | 210, 000 | 160, 000 | | Total costs |\$561, 000 |\$419, 000 | 2. | Number of pipes produced for Job M1 | 1, 100 | | | Cost per pipe (\$561, 000 [pic]1, 100) |\$510 | | 3. Finished Goods Control|561, 000 Work-in-Process Control 561, 000 4.

Rafael Company began May 2011 with no work-in-process inventory. During May, it started and finished M1. It also started M2, which is still in work-in-process inventory at the end of May. M2's manufacturing costs up to this point, \$419, 000, remain as a debit balance in the Work-in-Process Inventory account at the end of May 2011. 4-28(20(30 min.) Job costing; actual, normal, and variation from normal costing. 1. Actual direct cost rate for professional labor=\$59 per professional labor-hour Actual indirect cost rate = [pic]=\$42 per professional labor-hour [pic] = [pic]=\$55 per professional labor-hour Budgeted indirect cost rate = [pic]=\$43 per professional labor-hour |(a) |(b) |(c) | | | Actual | Normal | Variation of | | | Costing | Costing | Normal Costing | | Direct-Cost Rate |\$59 |\$59 |\$55 | | |(Actual rate) |(Actual rate) |(Budgeted rate) | | Indirect-Cost Rate |\$42 |\$43 |\$43 | | |(Actual rate) |(Budgeted rate) |(Budgeted rate) | | 2. |(a) |(b) |(c) | | | Actual | Normal | Variation of | | | Costing | Costing | Normal Costing | | Direct Costs |\$59 (160 = \$ 9, 440 |\$59 (160 = \$ 9, 440 |\$55 (160 = \$ 8, 800 | | Indirect Costs |\$42 (160 = 6, 720 |\$43 (160 = 6, 880 |\$43 (160 = 6, 880 | | Total Job Costs |\$16, 160 |\$16, 320 |\$15, 680 | All three costing systems use the actual professional labor time of 160 hours. The budgeted 150 hours for the Pierre

Enterprises audit job is not used in job costing. However, Chico may have used the 150 hour number in bidding for the audit. The actual costing figure of \$16, 160 is less than the normal costing figure of \$16, 320 because the actual indirect-cost rate (\$42) is less than the budgeted indirect-cost rate (\$43).

The normal costing figure of \$16, 320 is more than the variation of normal costing (based on budgeted rates for direct costs) figure of \$15, 680, because the actual direct-cost rate (\$59) is more than the budgeted direct-cost rate (\$55). Although not required, the following overview diagram summarizes Chico’s job-costing system. [pic] 4-29(20(30 min.) Job costing; actual, normal, and variation from normal costing. 1. Actual direct cost rate for architectural labor=\$92 per architectural labor-hour Actual indirect cost rate = [pic]=\$50 per architectural labor-hour [pic] = [pic]=\$90 per architectural labor-hour Budgeted indirect cost rate = [pic]=\$54 per architectural labor-hour

	(a)	(b)	(c)
Actual Costing	Normal Costing	Variation of Costing	
Direct-Cost Rate	\$92	\$92	\$90
(Actual rate)	(Actual rate)	(Budgeted rate)	
Indirect-Cost Rate	\$50	\$54	\$54
(Actual rate)	(Budgeted rate)	(Budgeted rate)	

2. (a) (b) (c)

	(a)	(b)	(c)
Direct Costs	\$92 (250 = \$23, 000	\$92 (250 = \$23, 000	\$90 (250 = \$22, 500
Indirect Costs	\$50 (250 = 12, 500	\$54 (250 = 13, 500	\$54 (250 = 13, 500
Total Job Costs	\$35, 500	\$36, 500	\$36, 000

All three costing systems use the actual architectural labor time of 250 hours. The budgeted 275 hours for the Champ Tower job is not used in job costing. However, Braden Brothers may have used the budgeted number of hours in bidding for

the job. 30. (30 min.) Proration of overhead. [pic] = [pic] [pic] 2. Overhead allocated = 50% [pic] Actual direct manufacturing labor cost = 50% [pic] \$228, 000 = \$114, 000 | Underallocated |= | Actual |- | Allocated plant | | | manufacturing | | manufacturing | | overhead costs | | | overhead | | overhead costs | | | = \$117, 000 - \$114, 000 = \$3, 000 Underallocated manufacturing overhead = \$3, 000 3a. All underallocated manufacturing overhead is written off to cost of goods sold. Both work in process (WIP) and finished goods inventory remain unchanged. | Account | Dec. 31, 2011 | Proration of \$3, 000 | Dec. 31, 2011 | | Balance | Underallocated | Balance | | (Before Proration) | Manuf.

Overhead |(After Proration) | | (1) |(2) |(3) = (1) + (2) | | WIP |\$ 50, 700 |\$ 0 | \$ 50, 700 | | Finished Goods | 245, 050 | 0 | 245, 050 | | Cost of Goods Sold | 549, 250 | 3, 000 | 552, 250 | | Total |\$845, 000 |\$3, 000 |\$848, 000 | 3b.

Underallocated manufacturing overhead prorated based on ending balances: | Account | Dec. 31, 2011 Account | Account | Proration of \$3, 000 | Dec. 1, 2011 Account | | Balance | Balance as a | Underallocated | Balance | | (Before Proration) | Percent of Total | Manuf. Overhead |(After Proration) | | (1) |(2) = (1) ? \$845, 000 |(3) = (2)[pic]\$3, 000 |(4) = (1) + (3) | | WIP |\$ 50, 700 | 0. 06 | 0. 06 [pic] \$3, 000 = \$ 180 |\$ 50, 880 | | Finished Goods | 245, 050 | 0. 29 | 0. 29 [pic] \$3, 000 = 870 | 245, 920 | | Cost of Goods Sold | 549, 250 | 0. 65 | 0. 5 [pic] \$3, 000 = 1, 950 | 551, 200 | | Total |\$845, 000 | 1. 00 |\$3, 000 |\$848, 000 | 3c. Underallocated manufacturing overhead prorated based on 2011 overhead in ending balances: | Account | Dec. 31, 2011 | Allocated Manuf. | Allocated Manuf. Overhead | Proration of \$3, 000 | Dec.

31, 2011 | | | Account | Overhead in | in | Underallocated | Account | | |
 Balance | Dec. 31, 2011 Balance | Dec. 31, 2011 | Manuf.

Overhead | Balance | | |(Before Proration) |(Before Proration) | Balance as a |
 (4) = (3)[pic]\$3, 000 |(After Proration) | | |(1) |(2) | Percent of Total | |(5) =
 (1) + (4) | | | |(3) = (2) ? \$114, 000 | | | WIP |\$ 50, 700 |\$ 10, 260a | 0. 09 |
 0. 09 [pic] \$3, 000 = \$ 270 |\$ 50, 970 | | Finished Goods | 245, 050 | 29,
 640b | 0. 26 | 0. 6 [pic] \$3, 000 = 780 | 245, 830 | | Cost of Goods Sold | 549,
 250 | 74, 100c | 0. 65 | 0. 65 [pic] \$3, 000 = 1, 950 | 551, 200 | | Total |
 \$845, 000 |\$114, 000 | 1. 00 | \$3, 000 | \$848, 000 | a, b, c Overhead
 allocated = Direct manuf. labor cost[pic]50% = \$20, 520; \$59, 280; \$148,
 200[pic]50% 4. Writing off all of the underallocated manufacturing overhead
 to Cost of Goods Sold (CGS) is usually warranted when CGS is large relative
 to Work-in-Process and Finished Goods Inventory and the underallocated
 manufacturing overhead is immaterial. Both these conditions apply in this
 case.

ROW should write off the \$3, 000 underallocated manufacturing overhead to
 Cost of Goods Sold Account. 4-31 (20(30 min))Job costing, accounting for
 manufacturing overhead, budgeted rates. 1. An overview of the job-costing
 system is: [pic] 2. Budgeted manufacturing overhead divided by allocation
 base: a. Machining Department: [pic]= \$52 per machine-hour b. Finishing
 Department: [pic]= 194% of direct manufacturing labor costs 3. Machining
 Department overhead, \$52 (130 machine-hours\$6, 760 Finishing
 Department overhead, 194% of \$1, 100 2, 134 Total manufacturing
 overhead allocated\$8, 894 4. Total costs of Job 431: Direct costs: Direct
 materials--Machining Department\$15, 500 --Finishing Department5, 000

Direct manufacturing labor—Machining Department 400 —Finishing Department 1, 100 \$22, 000 Indirect costs: Machining Department overhead, \$52 (130 \$ 6, 760 Finishing Department overhead, 194% of \$1, 100 2, 134 8, 894 Total costs \$30, 894 The per-unit product cost of Job 431 is \$30, 894 ? 400 units = \$77. 235 per unit The point of this part is (a) to get the definitions straight and (b) to underscore that overhead is allocated by multiplying the actual amount of the allocation base by the budgeted rate. 5. Machining Finishing Manufacturing overhead incurred (actual) \$11, 070, 000 \$8, 236, 000 Manufacturing overhead allocated 210, 000 hours (\$5210, 920, 000 94% of \$4, 400, 000 8, 536, 000 Underallocated manufacturing overhead \$ 150, 000 Overallocated manufacturing overhead \$ 300, 000 Total overallocated overhead = \$300, 000 - \$150, 000 = \$150, 000 6. A homogeneous cost pool is one where all costs have the same or a similar cause-and-effect or benefits-received relationship with the cost-allocation base. Fasano likely assumes that all its manufacturing overhead cost items are not homogeneous. Specifically, those in the Machining Department have a cause-and-effect relationship with machine-hours, while those in the Finishing Department have a cause-and-effect relationship with direct manufacturing labor costs.

Fasano believes that the benefits of using two cost pools (more accurate product costs and better ability to manage costs) exceeds the costs of implementing a more complex system. 4-32(15(20 min.) Service industry, job costing, law firm. 1. [pic] 2. [pic] = [pic] = [pic] = \$65 per professional labor-hour Note that the budgeted professional labor-hour direct-cost rate can also be calculated by dividing total budgeted professional labor costs of

\$2,600,000 (\$104,000 per professional (25 professionals) by total budgeted professional labor-hours of 40,000 (1,600 hours per professional (25 professionals), \$2,600,000 (40,000 = \$65 per professional labor-hour.

[pic][pic]= [pic] [pic] =[pic] =\$55 per professional labor-hour | 4. |

Richardson | Punch | | Direct costs: | | | Professional labor, \$65 (100; \$65 (150 | \$6,500 | \$9,750 | | Indirect costs: | | | Legal support, \$55 (100; \$55 (150 | 5,500 | 8,250 | | \$12,000 | \$18,000 | 4-33(25-30 min. Service industry, job costing, two direct- and indirect-cost categories, law firm

(continuation of 4-32). Although not required, the following overview diagram

is helpful to understand Keating's job-costing system. [pic] | 1. | Professional

| Professional | | Partner Labor | Associate Labor | | Budgeted compensation

per professional | \$200,000 | \$80,000 | | Divided by budgeted hours of

billable | | | time per professional | 1,600 | 1,600 | | Budgeted direct-cost

rate | \$125 per hour* | \$50 per hour† | *Can also be calculated as [pic]=

[pic]= [pic]=\$125 †Can also be calculated as [pic]= [pic]= [pic]=\$50 | 2. |

General | Secretarial | | Support | Support | | Budgeted total costs | \$1,800,

000 | \$400,000 | | Divided by budgeted quantity of allocation base | 40,000

hours | 10,000 hours | | Budgeted indirect cost rate | \$45 per hour | \$50 per

hour | | 3. | Richardson | Punch | | Direct costs: | | | Professional partners, | |

| | \$125 (60 hr. ; \$125 (30 hr. | \$7,500 | \$3,750 | | Professional associates, | |

| | \$50 (40 hr. ; \$50 (120 hr. 2,000 | 6,000 | | Direct costs | \$9,500 | \$9,

750 | | Indirect costs: | | | General support, | | | \$45 (100 hr. ; \$45 (150 hr.

| 4,500 | 6,750 | | Secretarial support, | | | \$50 (60 hr. ; \$50 (30 hr. 3,000

| 1,500 | | Indirect costs | 7,500 | 8,250 | | Total costs | \$17,000 | \$18,000 |

| 4. | Richardson | Punch | | Single direct - Single indirect | | | (from Problem

4-32) | \$12,000 | \$18,000 | Multiple direct - Multiple indirect | | | (from

requirement 3 of Problem 4-33) | 17, 000 | 18, 000 | | Difference |\$ 5, 000 |\$ 0 | | | undercosted | no change | The Richardson and Punch jobs differ in their use of resources. The Richardson job has a mix of 60% partners and 40% associates, while Punch has a mix of 20% partners and 80% associates. Thus, the Richardson job is a relatively high user of the more costly partner-related resources (both direct partner costs and indirect partner secretarial support). The Punch job, on the other hand, has a mix of partner and associate-related hours (1 : 4) that exactly equals the mix of partner and associate hours for the firm as a whole. The refined-costing system in Problem 4-33 increases the reported cost in Problem 4-32 for the Richardson job by 41. % (from \$12, 000 to \$17, 000) while it happens to correctly cost the Punch job.

4-34(20(25 min.) Proration of overhead. [pic] 2. [pic]=[pic] - [pic] =\$4, 900, 000 - \$4, 500, 000* =\$400, 000 *\$60 (75, 000 actual machine-hours = \$4, 500, 000 a. Write-off to Cost of Goods Sold | | Dec. 31, 2011 | Write-off | Dec. 31, 2011 | | | Account | of \$400, 000 | Account | | | Balance | Underallocated | Balance | | Account |(Before Proration) | Manufacturing (After Proration) | |(1) |(2) | Overhead |(4) = (2) + (3) | | | |(3) | | | | | | Work in Process |\$ 750, 000 |\$ 0 |\$ 750, 000 | | Finished Goods | 1, 250, 000 | 0 | 1, 250, 000 | | Cost of Goods Sold | 8, 000, 000 | 400, 000 | 8, 400, 000