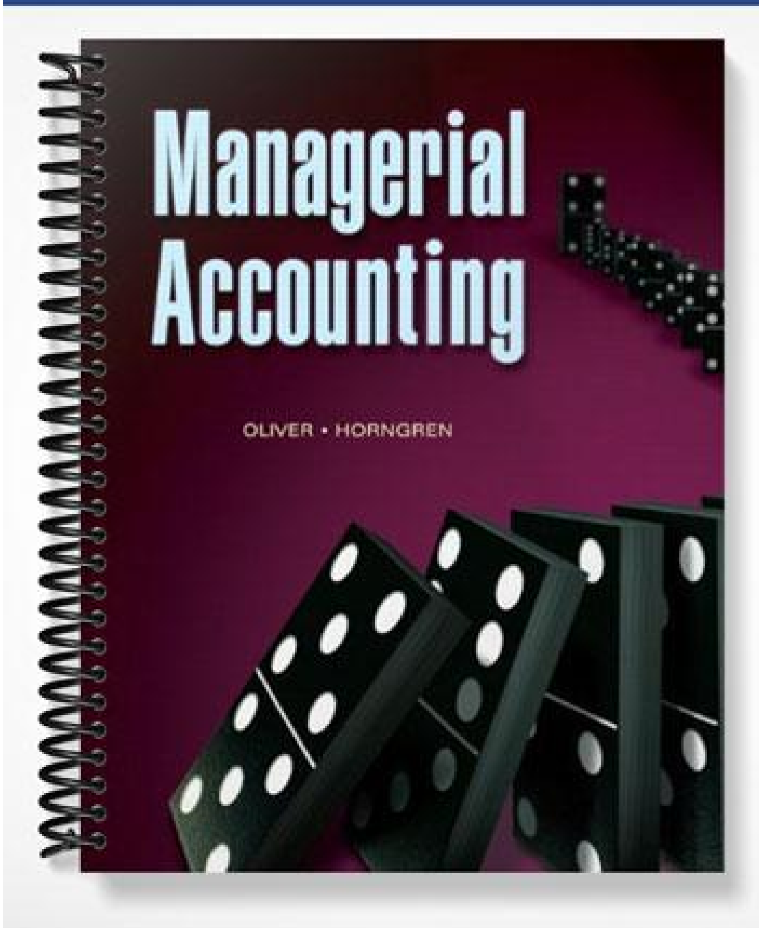
SOLUTIONS MANUAL



# Chapter 2

# Job Order Costing

## Short Exercises

**(5 minutes) S 2-1**

a. **A manufacturer of plywood would use *process costing*.**

b. **A manufacturer of wakeboards would use *process costing*.**

c. **A manufacturer of luxury yachts would use *job order costing*.**

d. **A professional services firm would use *job order costing*.**

e. **A landscape garden contractor would use *job order costing*.**

**(10 minutes) S 2-2**

**1** a. **Materials inventory**

**3** b. **Finished goods inventory**

**4** c. **Cost of goods sold**

**2** d. **Work in process inventory**

(5-10 minutes) **S 2-3**

***Req. 1***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Materials inventory | | 76,400 | |
| | | Accounts payable | | | 76,400 |
| | | To record purchases of materials | | | |
| | | | | | |
| | | Work in process inventory | | 63,000 | |
| | | Manufacturing overhead | | 450 | |
| | | Materials inventory | | | 63,450 |
| | | To record use of materials | | | |

***Req. 2 and 3***

| Materials Inventory | | | |
|---|---|---|---|
| Bal. | 35,000 | 63,450 | Used |
| Purchased | 76,400 | | |
| Bal. | 47,950 | | |

## (10 minutes) S 2-4

**Materials Inventory**

| | | | |
|---|---|---|---|
| Bal. | 30 | | |
| Purchases | 210 | Used | 170 |
| Bal. | 70 | | |

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| Bal. | 40 | | |
| Direct materials | 150 | | |
| Direct labor | 320 | Cost of goods manufactured | 630 |
| Manufacturing overhead | 140 | | |
| Bal. | 20 | | |

| | |
|---|---|
| Materials requisitioned (used) | $170 |
| Direct materials used | (150) |
| Indirect materials used | $ 20 |

## (5 minutes) S 2-5

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Manufacturing wages | | 78,490 | |
| | | Wages payable (or Cash) | | | 78,490 |
| | | To record incurrence of | | | |
| | | manufacturing wages | | | |
| | | ($550 + $940 + $77,000) | | | |
| | | | | | |
| | | Work in process inventory | | 77,000 | |
| | | Manufacturing overhead | | 1,490 | |
| | | Manufacturing wages | | | 78,490 |
| | | To assign manufacturing wages | | | |

## (5 minutes) S 2-6

| | | |
|---|---|---|
| 1. | Direct materials used…………………… ($32,000 - $2,500) | $ 29,500 |
| | Indirect materials used………………… | 2,500 |
| 2. | Direct labor……………………………….. ($71,000 - $11,000) | 60,000 |
| | Indirect labor…………………………….. | 11,000 |

## (5 minutes) S 2-7

**Manufacturing Overhead**

| | | |
|---|---|---|
| Indirect manufacturing labor | 41,000 | |
| Nails, glue, and stain | 21,000 | |
| Depreciation on saws | 4,500 | |
| Bal. | 66,500 | |

(The following explanation is not required.)

Wood is a direct material.
Depreciation on delivery truck is a distribution/selling expense.
Assembly-line workers' wages are direct labor.

(5 minutes) **S 2-8**

| | |
|---|---|
| **Manufacturing overhead cost allocated** | |
| **(.60 × $350)…………………………………...** | **$ 210** |
| | |
| **Total cost of Job 303:** | |
| **Direct materials………………………………...** | **$ 470** |
| **Direct labor……………………………………...** | **350** |
| **Manufacturing overhead……………………..** | **210** |
| **Total cost of Job 303……………………………..** | **$1,030** |

(10 minutes) **S 2-9**

1. **Actual manufacturing overhead** **$50,500**
   **($2,500 + $11,000 + $37,000)**

2. **Allocated manufacturing overhead…... $52,500**

3. **Manufacturing overhead is**
   **($50,500 actual − $52,500 allocated) = $2,000** **Overallocated**

## (10 minutes) S 2-10

***Req. 1***

**Actual manufacturing overhead = $199,000**

***Req. 2***

**Allocated manufacturing overhead = $215,000**

***Req. 3***

| | | | | |
|---|---|---|---|---|
| **Allocated manufacturing overhead cost** | **=** | **predetermined manufacturing overhead rate** | **×** | **actual direct labor cost** |
| **$215,000** | **=** | **predetermined manufacturing overhead rate** | **×** | **$170,000** |

$$\frac{\$215{,}000}{\$170{,}000} = \text{predetermined manufacturing overhead rate}$$

**= 1.2647 = 126.47%**
**= $1.26 per direct labor cost**

***Req. 4***

**Manufacturing overhead is <u>overallocated</u> by $16,000.**
**$215,000 - $199,000 = $16,000**

***Req.5***

**Cost of Goods Sold is <u>too high</u>.**

(5 minutes) **S 2-11**

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Manufacturing overhead | | 16,000 | |
| | | Cost of goods sold | | | 16,000 |
| | | To close overallocated | | | |
| | | overhead to cost of goods sold. | | | |

(5 minutes) **S 2-12**

***Req. 1***

$$\frac{\$108{,}000 \text{ / year}}{2{,}000 \text{ hr. / year}} = \$54 \text{ / hour}$$

***Req. 2***

**Client 507:**

**18 hours × $54 / hour = $972**

**(5 minutes) S 2-13**

***Req. 1***

$$\text{Indirect cost allocation rate} = \frac{\$360{,}000}{12{,}000 \text{ hours}}$$

$$= \$30 \text{ / hour}$$

***Req. 2***

**Client 507:**

**18 hours × \$30 / hour = \$540**

## Exercises

**(5-10 minutes) E 2-14**

a. ***Job order costing*** **is used by companies that produce small quantities of many different products.**

b. **Georgia-Pacific pulverizes wood into pulp to manufacture cardboard. The company uses a *process costing* system.**

c. **To record costs of maintaining thousands of identical mortgage files, financial institutions like Money Tree use a *process costing* system.**

d. **Companies that produce large numbers of identical products use *process costing* systems for product costing.**

e. **The computer repair service that visits your home and repairs your computer would use a *job order costing* system.**

## (15 minutes) E 2-15

| Job No. | Date | | | Total Cost of Job at May 31 | Status of Job at May 31 |
|---|---|---|---|---|---|
| | Started | Finished | Sold | | |
| 1 | April 21 | May 16 | May 17 | $ 3,800 | Sold |
| 2 | April 29 | May 21 | May 26 | 13,700 | Sold |
| 3 | May 3 | June 11 | June 13 | 6,500 | WIP |
| 4 | May 7 | May 29 | June 1 | 4,200 | Finished Goods |

**(a) Work in Process Inventory**

| Job | Cost |
|---|---|
| 3.................. | $6,500 |

**(b) Finished Goods Inventory**

| Job | Cost |
|---|---|
| 4................ | $4,200 |

**(c) Cost of Goods Sold**

| Job | Cost |
|---|---|
| 1............ | $ 3,800 |
| 2............ | 13,700 |
| Total....... | $17,500 |

## (20-25 minutes) E 2-16

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | a. | Web site expenses | | 2,100 | |
| | | Cash | | | 2,100 |
| | | | | | |
| | b. | Manufacturing wages | | 17,000 | |
| | | Cash | | | 17,000 |
| | | | | | |
| | c. | Materials inventory | | 15,000 | |
| | | Accounts payable | | | 15,000 |
| | | | | | |
| | d. | Work in process inventory | | 9,000 | |
| | | Manufacturing overhead | | 1,500 | |
| | | Materials inventory | | | 10,500 |
| | | | | | |
| | e. | Work in process inventory | | | |
| | | ($17,000 × 0.55) | | 9,350 | |
| | | Manufacturing overhead | | | |
| | | ($17,000 × 0.45) | | 7,650 | |
| | | Manufacturing wages | | | 17,000 |
| | | | | | |
| | f. | Manufacturing overhead | | 16,100 | |
| | | Accum. depreciation—plant | | | 11,000 |
| | | Property tax payable | | | 4,100 |
| | | Prepaid insurance | | | 1,000 |
| | | | | | |
| | g. | Work in process inventory ($9,350 × 1.60) | | 14,960 | |
| | | Manufacturing overhead | | | 14,960 |
| | | | | | |
| | h. | Finished goods inventory | | 32,000 | |
| | | Work in process inventory | | | 32,000 |
| | | | | | |
| | i. | Accounts receivable | | 24,000 | |
| | | Sales revenue | | | 24,000 |
| | | | | | |
| | | Cost of goods sold | | 16,000 | |
| | | Finished goods inventory | | | 16,000 |

## (15 minutes) E 2-17

(a) Purchased materials

(b) Used direct and indirect materials in production (requisitioned direct and indirect materials)

(c) Incurred manufacturing wages

(d) Assigned manufacturing wages as direct and indirect labor

(e) Incurred other manufacturing overhead costs

(f) Allocated manufacturing overhead to jobs

(g) Completed jobs (transferred inventory to finished goods; cost of goods manufactured)

(h) Sold inventory (cost of goods sold)

(i) Wrote off underallocated balance of manufacturing overhead to Cost of Goods Sold

(15-20 minutes) **E 2-18**

***Req. 1***

**Work in process at April 30 = $15,000:**

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| April 1 Balance | 18,000 | Job 142 completed | 37,000 |
| Direct materials used | 29,000 | Job 143 completed | 35,000 |
| Direct labor assigned to jobs | 31,000 | | |
| Manufacturing overhead allocated to jobs | 9,000 | | |
| April 30 Balance | 15,000 | | |

***Reqs. 2 and 3***

**Journal**

| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
|---|---|---|---|---|---|
| | | Finished goods inventory | | | |
| | | ($37,000 + $35,000) | | 72,000 | |
| | | Work in process inventory | | | 72,000 |
| | | To record production completed | | | |
| | | in April. | | | |
| | | | | | |
| | | Accounts receivable | | 45,000 | |
| | | Sales revenue | | | 45,000 |
| | | To record credit sale of Job 143. | | | |
| | | | | | |
| | | Cost of goods sold | | 35,000 | |
| | | Finished goods inventory | | | 35,000 |
| | | To record cost of goods sold | | | |
| | | for Job 143. | | | |

***Req. 4***

| | |
|---|---|
| **Sales revenue.................** | **$45,000** |
| **Cost of goods sold..........** | **35,000** |
| **Gross profit.....................** | **$ 10,000** |

**The gross profit must cover operating expenses, including all nonmanufacturing costs: administration, customer service, design, distribution, marketing, other costs (interest expense and income taxes) and R&D.**

**(15-20 minutes) E 2-19**

***Req. 1***

$$\text{Predetermined mfg. overhead rate} = \frac{\$93{,}000}{\$75{,}000} = \$1.24 \text{ per direct labor dollar}$$

***Req. 2***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Work in process inventory | | | |
| | | ($64,000 × 1.24) | | 79,360 | |
| | | Manufacturing overhead | | | 79,360 |
| | | To allocate manufacturing overhead | | | |

***Req. 3***

| Manufacturing Overhead | |
|---|---|
| 84,000 | 79,360 |
| 4,640 | |

**Underallocated by $4,640**

***Req. 4***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Cost of goods sold | | 4,640 | |
| | | Manufacturing overhead | | | 4,640 |
| | | To close the manufacturing | | | |
| | | overhead account | | | |

(15-20 minutes) **E 2-20**

***Req. 1***

**Predetermined manufacturing overhead rate:**

$$\frac{\text{Total estimated manufacturing overhead costs}}{\text{Total estimated machine hours}}$$

$$\frac{\$730{,}000}{66{,}000 \text{ hours}} = \$11.06 \text{ / machine hour}$$

***Req. 2***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Work in process inventory | | 641,480 | |
| | | Manufacturing overhead | | | 641,480 |
| | | (58,000 × $11.06) | | | |

***Req. 3***

**Manufacturing Overhead**

| | | | |
|---|---|---|---|
| Depreciation | 440,000 | Allocated | 641,480 |
| Property taxes - plant | 18,000 | | |
| Plant janitors' wages | 9,000 | | |
| | | Balance | 174,480 |

**Manufacturing Overhead = Overallocated by $174,480**

***Req. 4***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF | DEBIT | CREDIT |
| | | Manufacturing overhead | | 174,480 | |
| | | Cost of goods sold | | | 174,480 |
| | | To close overallocated | | | |
| | | manufacturing overhead | | | |
| | | | | | |

**This entry <u>decreases</u> cost of goods sold.**

## (continues E 2-20) (10-15 minutes) E 2-21

*Req. 1*

**Manufacturing Overhead**

| | | | |
|---|---|---|---|
| Depreciation | 570,000 | Allocated | 641,480 |
| Property taxes - plant | 18,000 | | |
| Plant janitors' wages | 9,000 | | |
| Balance | | | 44,480 |

**Overallocated by $44,480**

*Req. 2*

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Manufacturing overhead | | 44,480 | |
| | | Cost of goods sold | | | 44,480 |
| | | To close overallocated manufacturing | | | |
| | | overhead to cost of goods sold. | | | |

*Req. 3*

| | |
|---|---|
| Unadjusted cost of goods sold………………..... | $610,000 |
| Less: Overallocated manufacturing overhead. | 44,480 |
| Adjusted cost of goods sold…………………….. | $565,520 |

(15-20 minutes) **E 2-22**

***Req. 1***

| | | |
|---|---|---|
| X | = | Actual number of machine hours |
| $43 X | = | $402,000 |
| X | = | 9,349 machine hours |

***Req. 2***

**Manufacturing overhead was $25,250 underallocated:**

| | |
|---|---|
| Actual overhead cost………………. | $432,000 |
| Allocated overhead………………… | 402,000 |
| Underallocated overhead………… | $ 30,000 |

***Req. 3***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Cost of goods sold | | 30,000 | |
| | | Manufacturing overhead | | | 30,000 |
| | | To close underallocated manufacturing | | | |
| | | overhead to cost of goods sold. | | | |

(15-20 minutes) **E 2-23**

***Req. 1***

**a. Direct labor cost rate:**

$$\frac{\text{Direct labor costs}}{\text{Direct labor hours}} = \frac{\$2,150,000}{14,000 \text{ hours}}$$

$$= \underline{\underline{\$153.57\ /\text{hour}}}$$

**b. Indirect cost allocation rate:**

| | |
|---|---|
| **Indirect costs:** | |
| Office rent...................... | $ 260,000 |
| Support staff salaries....... | 850,000 |
| Utilities............................. | 350,000 |
| Total indirect costs.......... | $1,460,000 |

**Predetermined indirect cost allocation rate:**

$$\frac{\text{Total estimated indirect costs}}{\text{Total estimated direct labor costs}} = \frac{\$1,460,000}{\$2,150,000} = \underline{\underline{67.91\%}}$$

***Req. 2***

**Maynard Manufacturing's predicted cost:**

| | |
|---|---|
| Direct labor: 260 hours × $153.57 / hour | $39,928 |
| Indirect costs: $39,928 × 0.6790........... | 27,111 |
| Total predicted cost……………………… | $67,039 |

***Req. 3***

| | |
|---|---|
| Predicted cost (from *Req. 2*)..........……... | $ 67,039 |
| Desired profit (55% × 67,039)...........….… | 36,871 |
| Required service revenue.......…………… | $103,910 |

**The bid price should be $103,910 to earn a profit of 55% of predicted cost.**

# Problems – Group A

**(25-35 minutes) P 2-24A**

***Req. 1***

**Huntley uses a <u>job order costing</u> system. We know this because Huntley's costing records show costs being accumulated for each <u>job</u>.**

***Req. 2***

| Huntley Manufacturing | | | | | | |
|---|---|---|---|---|---|---|
| Computation of Work in Process Inventory, | | | | | | |
| Finished Goods Inventory, and Cost of Goods Sold | | | | | | |
| for November and December | | | | | | |
| Date | (a) Work in Process Inventory | | (b) Finished Goods Inventory | | (c) Cost of Goods Sold | |
| | Job | Cost | Job | Cost | Job | Cost |
| November 30 | 3 | $600 | 2 | $1,200 | 1 | $1,300 |
| | 4 | 1100 | | | | |
| | Total | $1700 | Total | $1,200 | | $1,300 |
| | | | | | | |
| December 31 | 6 | $900 | 4 | $2,500 | 2 | $1,200 |
| | | | | | 3 | 1,300 |
| | | | | | 5 | 650 |
| | Total | $900 | Total | $2,500 | Total | $3,150 |

***Req. 3***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| Nov | | Finished goods inventory | | 2,500 | |
| | | Work in process inventory | | | 2,500 |
| | | To record completion of Jobs 1 and | | | |
| | | 2 in November | | | |
| | | | | | |
| Dec | | Finished goods inventory | | 4,450 | |
| | | Work in process inventory | | | 4,450 |
| | | To record completion of Jobs | | | |
| | | 3, 4, and 5 in December | | | |
| | | ($1,300 + $2,500 + $650) | | | |

***Req. 4***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Accounts receivable | | 2,400 | |
| | | Sales revenue | | | 2,400 |
| | | To record the sale of Job 3. | | | |
| | | | | | |
| | | Cost of goods sold | | 1,300 | |
| | | Finished goods inventory | | | 1,300 |
| | | To record the cost of goods sold | | | |
| | | for Job 3. | | | |

***Req. 5***

**The gross profit for Job 3 is:**

| | |
|---|---|
| **Sales revenue........................** | **$2,400** |
| **Cost of goods sold...............** | **(1,300)** |
| **Gross profit...........................** | **$1,100** |

**The gross profit must be high enough to cover all nonmanufacturing costs: administration, customer service, design, distribution, marketing, interest expense, income taxes, and R&D.**

**(30-45 minutes) P 2-25A**

***Req. 1***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | a. | Materials inventory | | 470,000 | |
| | | Accounts payable | | | 470,000 |
| | | | | | |
| | b. | Construction wages | | 230,000 | |
| | | Wages payable | | | 230,000 |
| | | | | | |
| | c. | Work in process inventory | | 447,000 | |
| | | Materials inventory | | | 270,000 |
| | | Construction wages | | | 177,000 |
| | | | | | |
| | d. | Construction overhead | | 6,800 | |
| | | Accumulation depreciation | | | |
| | | —Equipment | | | 6,800 |
| | | | | | |
| | e. | Construction overhead | | 93,000 | |
| | | Construction wages | | | 53,000 |
| | | Cash | | | 33,000 |
| | | Prepaid insurance | | | 7,000 |
| | | | | | |
| | f. | Work in process inventory | | | |
| | | ($177,000 × 0.40) | | 70,800 | |
| | | Construction overhead | | | 70,800 |
| | | | | | |
| | g. | Finished goods inventory | | 246,800 | |
| | | Work in process inventory | | | 246,800 |
| | | 402 = $114,000; 404 = $132,800 | | | |

***Req. 1***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | h. | Accounts receivable | | 220,000 | |
| | | Sales revenue | | | 220,000 |
| | | | | | |
| | h. | Cost of goods sold | | 132,800 | |
| | | Finished goods inventory | | | 132,800 |

***Req. 2***

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| (c) | 447,000 | (g) | 246,800 |
| (f) | 70,800 | | |
| Bal. | 271,000 | | |

**Finished Goods Inventory**

| | | | |
|---|---|---|---|
| (g) | 246,800 | (h) | 132,800 |
| Bal. | 114,000 | | |

| WIP 402 | WIP 403 | WIP 404 | WIP 405 |
|---|---|---|---|
| $ 58,000 | $ 63,000 | $ 60,000 | $ 89,000 |
| 40,000 | 34,000 | 52,000 | 51,000 |
| 16,000 | 13,600 | 20,800 | 20,400 |
| $114,000 | $110,600 | $132,800 | $160,400 |

***Req. 3***

| Sherborn Construction, Inc.<br>Reconciliation of Work in Process Inventory Subsidiary<br>And Control Accounts | | | |
|---|---|---|---|
| | House #403 | House #405 | Work in Process Balance |
| Unfinished houses: | | | |
| Direct materials | $ 63,000 | $ 89,000 | |
| Direct labor | 34,000 | 51,000 | |
| Construction overhead | | | |
| (40% of labor) | 13,600 | 20,400 | |
| Total cost equals work | | | |
| In process balance | $110,600 | $160,400 | $271,000 |

***Req. 4***

| Sherborn Construction, Inc.<br>Reconciliation of Finished Goods Inventory Subsidiary<br>and Control Accounts | |
|---|---|
| | House #402 |
| Completed, unsold houses: | |
| Direct materials | $ 58,000 |
| Direct labor | 40,000 |
| Construction overhead | |
| (40% of labor) | 16,000 |
| Total cost equals finished | |
| goods balance | $114,000 |

***Req. 5***

| Sherborn Construction, Inc. | |
|---|---|
| Gross Profit on Home Sold in August | |
| | House #404 |
| Sales revenue | $220,000 |
| Cost of goods sold | (132,800) |
| Gross profit | $ 87,200 |

**The gross profit must cover R&D and design costs (such as the costs of developing and designing new house plans), marketing costs, distribution costs, customer service (such as the cost of fixing problems found during the first month the home is occupied), administrative costs, and income taxes.**

(30-35 minutes) **P 2-26A**

***Req. 1***

| Job Cost Record | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| JOB NO. 423 | | | | | | | | |
| CUSTOMER NAME Cheetah Pictures | | | | | | | | |
| JOB DESCRIPTION 5,100 DVDs | | | | | | | | |
| DATE PROMISED 11-5 | | | | DATE STARTED 11-2 | | DATE COMPLETED 11-3 | | |
| | | DIRECT MATERIALS | | DIRECT LABOR | | MANUFACTURING OVERHEAD ALLOCATED | | |
| DATE | | REQUISITION NUMBER | AMOUNT | LABOR TIME RECORD NUMBER | AMOUNT | DATE | RATE | AMOUNT |
| 2010 | | | | | | | | |
| 11 | 2 | 63 | $ 310 | 655 | $200 | 11 3 | 116%* of direct | |
| | 2 | 64 | 650 | | | | labor cost | $510 |
| | 3 | 74 | 120 | 656 | 240 | OVERALL COST SUMMARY | | |
| | | | | | | DIRECT MATERIALS………... | | $1,080 |
| | | | | | | DIRECT LABOR……..……… | | 440 |
| | | | | | | MANUFACTURING OVERHEAD ALLOCATED…... | | 510 |
| Totals | | | $1,080 | | $440 | TOTAL JOB COST……….. | | $2,030 |

***$520,000 / $450,000 = $1.16 per direct labor dollar (cost)**

*Req. 2*

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Work in process inventory | | 1,080 | |
| | | Materials inventory | | | 1,080 |
| | | To record use of direct materials | | | |
| | | in Job 423. | | | |
| | | | | | |
| | | Work in process inventory | | 440 | |
| | | Manufacturing wages | | | 440 |
| | | To assign direct labor to Job 423. | | | |
| | | | | | |
| | | Work in process inventory | | 510 | |
| | | Manufacturing overhead | | | 510 |
| | | To allocate overhead to Job 423. | | | |

*Req. 3*

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Finished goods inventory | | 2,030 | |
| | | Work in Process Inventory | | | 2,030 |
| | | To record completion of Job 423. | | | |
| | | | | | |
| | | Accounts receivable | | 6,630 | |
| | | Sales revenue ($1.30 × 5,100) | | | 6,630 |
| | | To record sale of 5,100 DVDs. | | | |
| | | | | | |
| | | Cost of goods sold | | 2,030 | |
| | | Finished goods inventory | | | 2,030 |

**(90-120 minutes) P 2-27A**

***Reqs. 1 and 2***

**General Ledger:**

**Cash**

| | | | |
|---|---|---|---|
| Bal. | 18,000 | (b) | 25,000 |
| (a) | 149,000 | (c) | 38,000 |
| | | (f) | 38,800 |
| Bal. | 65,200 | | |

**Accounts Receivable**

| | | | |
|---|---|---|---|
| Bal. | 170,000 | (a) | 149,000 |
| (k) | 110,000 | | |
| Bal. | 131,000 | | |

**Materials Inventory**

| | | | |
|---|---|---|---|
| Bal. | 5,300 | (e) | 10,550 |
| (d) | 29,100 | | |
| Bal. | 23,850 | | |

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| Bal. | 41,300 | (j) | 48,850 |
| (e) | 8,550 | | |
| (g) | 22,000 | | |
| (i) | 15,400 | | |
| Bal. | 38,400 | | |

**Finished Goods Inventory**

| | | | |
|---|---|---|---|
| Bal. | 21,300 | (k) | 48,850 |
| (j) | 48,850 | | |
| Bal. | 21,300 | | |

**Plant Assets**

| | | | |
|---|---|---|---|
| Bal. | 250,000 | | |

**Accumulated Depreciation**

| | | | |
|---|---|---|---|
| | | Bal. | 68,000 |
| | | (h) | 2,400 |
| | | Bal. | 70,400 |

**Accounts Payable**

| | | | |
|---|---|---|---|
| (c) | 38,000 | Bal. | 129,000 |
| | | (d) | 29,100 |
| | | Bal. | 120,100 |

**Wages Payable**

| | | | |
|---|---|---|---|
| (f) | 38,800 | Bal. | 2,800 |
| | | (f) | 38,000 |
| | | Bal. | 2,000 |

**Common Stock**

| | | | |
|---|---|---|---|
| | | Bal. | 140,000 |

***Reqs. 1 and 2***

**General Ledger:**

**Retained Earnings**

| | | | |
|---|---|---|---|
| | | Bal. | 166,100 |

**Sales Revenue**

| | | | |
|---|---|---|---|
| | | (k) | 110,000 |

**Cost of Goods Sold**

| | | | |
|---|---|---|---|
| (k) | 48,850 | | |
| (l) | 5,000 | | |
| Bal. | 53,850 | | |

**Manufacturing Wages**

| | | | |
|---|---|---|---|
| (f) | 38,000 | (g) | 38,000 |

**Manufacturing Overhead**

| | | | |
|---|---|---|---|
| (e) | 2,000 | (i) | 15,400 |
| (g) | 16,000 | (l) | 5,000 |
| (h) | 2,400 | | |
| Bal. | 0 | | |

**Marketing and General Expenses**

| | | | |
|---|---|---|---|
| (b) | 25,000 | | |

**Materials Ledger:**

**Paper**

| | | | |
|---|---|---|---|
| Bal. | 4,800 | (e) | 8,550 |
| (d) | 24,500 | | |
| Bal. | 20,750 | | |

**Indirect Materials**

| | | | |
|---|---|---|---|
| Bal. | 500 | (e) | 2,000 |
| (d) | 4,600 | | |
| Bal. | 3,100 | | |

**Total Materials Inventory = $23,850**

***Reqs. 1 and 2***

**Work in Process Ledger:**

**Job 120**

| | | | |
|---|---|---|---|
| Bal. | 41,300 | (j) | 48,850 |
| (e) | 750 | | |
| (g) | 4,000 | | |
| (i) | 2,800 | | |
| Bal. | 0 | | |

**Job 121**

| | | | |
|---|---|---|---|
| (e) | 7,800 | | |
| (g) | 18,000 | | |
| (i) | 12,600 | | |
| Bal. | 38,400 | | |

**Work in Process Inventory = $38,400**

**Finished Goods Ledger:**

**Large Stars**

| | | | |
|---|---|---|---|
| Bal. | 9,300 | (k) | 48,850 |
| (j) | 48,850 | | |
| Bal. | 9,300 | | |

**Small Stars**

| | | | |
|---|---|---|---|
| Bal. | 12,000 | | |

**Finished Goods Inventory = $21,300**

*Req. 3*

| Sneeches' Stars | | |
|---|---|---|
| Trial Balance | | |
| April 30, 2010 | | |
| **ACCOUNT** | **DEBIT** | **CREDIT** |
| Cash | $ 65,200 | |
| Accounts receivable | 131,000 | |
| Inventories: | | |
| Materials | 23,850 | |
| Work in process | 38,400 | |
| Finished goods | 21,300 | |
| Plant assets | 250,000 | |
| Accumulated depreciation | | $ 70,400 |
| Accounts payable | | 120,100 |
| Wages payable | | 2,000 |
| Common stock | | 140,000 |
| Retained earnings | | 166,100 |
| Sales revenue | | 110,000 |
| Cost of goods sold | 53,850 | |
| Manufacturing wages | — | |
| Manufacturing overhead | — | |
| Marketing and general expenses | 25,000 | |
| Total | $608,600 | $608,600 |

*Req. 4*

| Sneeches' Stars<br>Schedule of Cost of Goods Manufactured<br>Month Ended April 30, 2010 | | |
|---|---|---|
| Beginning work in process inventory | | $ 41,300 |
| Add: Current manufacturing costs: | | |
| Direct materials used | $ 8,550 | |
| Direct labor | 22,000 | |
| Manufacturing overhead allocated | 15,400 | |
| Total manufacturing costs incurred | | |
| during the month | | 45,950 |
| Total manufacturing costs to account for | | 87,250 |
| Ending work in process inventory | | (38,400) |
| Cost of goods manufactured | | $ 48,850 |

*Req. 5*

| Sneeches' Stars<br>Income Statement<br>Month Ended April 30, 2010 | | |
|---|---|---|
| Sales revenue | | $110,000 |
| Cost of goods sold:* | | |
| Beginning finished goods inventory | $ 21,300 | |
| Cost of goods manufactured | 48,850 | |
| Cost of goods available for sale | 70,150 | |
| Ending finished goods inventory | (21,300) | |
| Unadjusted cost of goods sold | 48,850 | |
| Adjustment for underallocated | | |
| manufacturing overhead | 5,000 | |
| Adjusted cost of goods sold | | 53,850 |
| Gross profit | | 56,150 |
| Marketing and general expenses | | 25,000 |
| Operating income | | $ 31,150 |

(25-35 minutes) **P 2-28A**

***Req. 1***

**Estimated manufacturing overhead:**
= $11,000 + $42,000 + 29,000 + $48,000 + $82,000 = $212,000

**Predetermined manufacturing overhead rate:**

$$\frac{\text{Total estimated manufacturing overhead costs}}{\text{Total estimated machine hours}}$$

$$\frac{\$212{,}000}{24{,}000 \text{ hours}} = \$8.83 \text{ / machine hour}$$

***Req. 2***

**Allocated manufacturing overhead:**
= $8.83 × $32,000 = $282,560

**Manufacturing Overhead**

| | | | |
|---|---|---|---|
| Maintenance labor | 24,500 | 282,560 | Allocated |
| Plant supervisor's salary | 45,000 | | |
| Screws, nails, and glue | 44,000 | | |
| Plant utilities | 92,850 | | |
| Depreciation on plant and equipment | 81,000 | | |
| Balance | 4,790 | | |

***Req. 3***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Cost of good sold | | 4,790 | |
| | | Manufacturing overhead | | | 4,790 |
| | | To close underallocated manufacturing | | | |
| | | overhead to cost of goods sold. | | | |

***Req. 4***

**The actual manufacturing overhead rate is <u>not known until the end of the period</u>, and managers need to make decisions <u>throughout the period</u>. Accountants use predetermined overhead rates to give managers product cost information when they need it—<u>today</u>. Although this information is based on estimated manufacturing overhead rates, with experience, accountants' predetermined rates can come close to the actual rates.**

**(20-25 minutes) P 2-29A**

***Req. 1***

$$\frac{\text{Estimated indirect costs}}{\text{Estimated direct labor cost}} = \frac{\$308{,}000}{\$1{,}400{,}000} = \underline{\underline{22\%}}$$

***Req. 2***

| Robin Design, Inc. | | |
|---|---|---|
| Estimated Cost of Food Coop and Mesilla Chocolates Jobs | | |
| | Dining Coop | Root Chocolates |
| Direct Costs: | | |
| Direct labor* | | |
| 740 hr. × $140 | $103,600 | |
| 65 hr. × $140 | | $ 9,100 |
| Licensing costs | 2,100 | 300 |
| Travel | 9,000 | — |
| Total Direct Costs | 114,700 | 9,400 |
| Indirect Costs: | | |
| 0.22 × $103,600 | 22,792 | |
| 0.22 × $ 9,100 | | 2,002 |
| Total Costs | $137,492 | $11,402 |

* $140,000/$10,000 = $140

***Req. 3***

| | | |
|---|---|---|
| **Sales revenue − Total cost** | **=** | **Profit** |
| **Sales revenue − Total cost** | **=** | **0.20 × Sales revenue** |
| **0.80 × Sales revenue** | **=** | **Total cost** |

$$\textbf{Sales revenue} = \frac{\textbf{Total cost}}{\textbf{0.80}}$$

**Dining Coop:**

$$\frac{\$137{,}492}{0.80} = \underline{\underline{\$171{,}865}}$$

**Root Chocolates:**

$$\frac{\$11{,}402}{0.80} = \underline{\underline{\$14{,}253}}$$

***Req. 4***

**Robin Design assigns costs to jobs to help the company *set fees* (selling prices) that cover all costs and contribute to profit. Assigning costs to individual clients can also help Robin Design *control costs*. If some costs appear too high, Robin Design can try to correct any inefficiencies.**

## Problems – Group B

**(25-35 minutes) P 2-30B**

***Req. 1***

**Hartley uses a job order costing system. We know this because Hartley's costing records show costs being accumulated for each job.**

***Req. 2***

| Hartley Manufacturing<br>Computation of Work in Process Inventory,<br>Finished Goods Inventory, and Cost of Goods Sold<br>for October and November | | | | | | |
|---|---|---|---|---|---|---|
| Date | (a) Work in Process Inventory | | (b) Finished Goods Inventory | | (c) Cost of Goods Sold | |
| | Job | Cost | Job | Cost | Job | Cost |
| October 31: | 3 | $1,000 | 2 | $1,500 | 1 | $1,400 |
| | 4 | 1,100 | | | | |
| | Total | $2,100 | | | | |
| | | | | | | |
| November 30: | 6 | $200 | 4 | $2,100 | 2 | $1,500 |
| | | | | | 3 | 2,200 |
| | | | | | 5 | 550 |
| | | | | | Total | $4,250 |

***Req. 3***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| Oct | | Finished goods inventory | | 2,900 | |
| | | Work in process inventory | | | 2,900 |
| | | To record completion of Jobs 1 & 2 | | | |
| | | in October. ($1,500 + $1,400) | | | |
| | | | | | |
| Nov | | Finished Goods Inventory | | 4,850 | |
| | | Work in Process Inventory | | | 4,850 |
| | | To record completion of Jobs 3, 4 and 5 in November ($2,100 + $2,200 + $500) | | | |
| | | | | | |

***Req. 4***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Accounts receivable | | 3,000 | |
| | | Sales revenue | | | 3,000 |
| | | To record the sale of Job 3. | | | |
| | | | | | |
| | | Cost of goods sold | | 2,200 | |
| | | Finished goods inventory | | | 2,200 |
| | | To record the cost of goods sold | | | |
| | | for Job 3. | | | |

***Req. 5***

**The gross profit for Job 3 is:**

| | |
|---|---|
| **Sales revenue............................** | **$3,000** |
| **Cost of goods sold..................** | **(2,200)** |
| **Gross profit...............................** | **$ 800** |

**The gross profit must be high enough to cover all nonmanufacturing (operating) costs: R&D, design, marketing, distribution, administration, and customer service, plus other costs such as interest expense and income taxes.**

(30-45 minutes) **P 2-31B**

***Req. 1***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | a. | Materials inventory | | 470,000 | |
| | | Accounts payable | | | 470,000 |
| | | | | | |
| | b. | Manufacturing wages | | 260,000 | |
| | | Wages payable | | | 260,000 |
| | | | | | |
| | c. | Work in process inventory | | 458,000 | |
| | | Materials inventory | | | 271,000 |
| | | Construction wages | | | 187,000 |
| | | | | | |
| | d. | Construction overhead | | 6,200 | |
| | | Accumulated depreciation— | | | |
| | | Equipment | | | 6,200 |
| | | | | | |
| | e. | Construction overhead | | 112,000 | |
| | | Construction wages | | | 73,000 |
| | | Cash | | | 30,000 |
| | | Prepaid insurance | | | 9,000 |
| | | | | | |
| | f. | Work in process inventory | | 74,800 | |
| | | Construction overhead | | | 74,800 |
| | | ($187,000 × 40%) | | | |

## (continued) P 2-31B

*Req. 1*

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | g. | Finished goods inventory | | 257,200 | |
| | | Work in process inventory | | | 257,200 |
| | | ($115,000 + $142,200) | | | |
| | h. | Accounts receivable | | 260,000 | |
| | | Sales revenue | | | 260,000 |
| | | | | | |
| | h. | Cost of goods sold | | 142,200 | |
| | | Finished Goods Inventory | | | 142,200 |

*Req. 2*

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| (c) | 458,000 | (g) | 257,200 |
| (f) | 74,800 | | |
| Bal. | 257,600 | | |

**Finished Goods Inventory**

| | | | |
|---|---|---|---|
| (g) | 257,200 | (h) | 142,200 |
| Bal. | 115,000 | | |

| WIP 402 | WIP 403 | WIP 404 | WIP 405 |
|---|---|---|---|
| $ 59,000 | $ 68,000 | $61,000 | $ 83,000 |
| 40,000 | 32,000 | 58,000 | 57,000 |
| 16,000 | 12,800 | 23,200 | 22,800 |
| $115,000 | $112,800 | $142,200 | $162,800 |

***Req. 3***

| Superior Construction, Inc.<br>Reconciliation of Work in Process Inventory Subsidiary<br>and Control Accounts | | |
|---|---|---|
| | House #403 | House #405 |
| Unfinished house: | | |
| Direct materials | $ 68,000 | $ 83,000 |
| Direct labor | 32,000 | 57,000 |
| Manufacturing overhead (40% of labor) | 12,800 | 22,800 |
| Total cost = Work in Process balance | $112,800 | $162,800 |

**Total WIP Balance = $275,600**

***Req. 4***

| Superior Construction, Inc.<br>Reconciliation of Finished Goods Inventory Subsidiary<br>and Control Accounts | |
|---|---|
| | House #402 |
| Completed, unsold house: | |
| Direct materials | $ 59,000 |
| Direct labor | 40,000 |
| Manufacturing overhead (40% of labor) | 16,000 |
| Total cost equals Finished Goods balance | $115,000 |

***Req. 5***

| Superior Construction, Inc. | |
|---|---|
| Gross Profit on Homes Sold in August | |
| | House #404 |
| Sales revenue | $ 260,000 |
| Cost of goods sold | (142,200) |
| Gross profit | $ 117,800 |

**The gross profit must cover R&D and design costs (such as the costs of developing and designing new chalet plans), marketing costs, distribution costs, administration costs, and customer service costs to fix warranty-related problems, and income taxes.**

(30-35 minutes) **P 2-32B**

***Req. 1***

| Job Cost Record | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| JOB NO. 423 | | | | | | | | | | |
| CUSTOMER NAME Stick People Pictures | | | | | | | | | | |
| JOB DESCRIPTION 5,400 DVD's | | | | | | | | | | |
| DATE PROMISED 4-5 | | | | DATE STARTED 4-2 | | DATE COMPLETED 4-3 | | | | |
| | | DIRECT MATERIALS | | DIRECT LABOR | | MANUFACTURING OVERHEAD ALLOCATED | | | | |
| DATE | | REQUISITION NO. | AMOUNT | LABOR TIME RECORD NO. | AMOUNT | DATE | | RATE | | AMOUNT |
| 2010 | | | | | | | | | | |
| 4 | 2 | 63 | $ 403 | 655 | $160 | 4 | 3 | 124% of direct | | |
| 4 | 2 | 64 | 650 | | | | | labor cost | | $570 |
| 4 | 3 | 74 | 120 | 656 | 300 | OVERALL COST SUMMARY | | | | |
| | | | | | | DIRECT MATERIALS.............. | | | | $1,173 |
| | | | | | | DIRECT LABOR...................... | | | | 460 |
| | | | | | | MANUFACTURING OVERHEAD ALLOCATED......... | | | | 570 |
| Totals | | | $1,173 | | $460 | TOTAL JOB COST.............. | | | | $2,203 |

***Req. 2***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Work in Process Inventory | | 1,173 | |
| | | Materials Inventory | | | 1,173 |
| | | | | | |
| | | Work in Process Inventory | | 460 | |
| | | Manufacturing Wages | | | 460 |
| | | | | | |
| | | Work in Process Inventory | | 570 | |
| | | Manufacturing Overhead | | | 570 |

***Req. 3***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Finished goods inventory | | 2,203 | |
| | | Work in process inventory | | | 2,203 |
| | | | | | |
| | | Accounts receivable | | 5,940 | |
| | | Sales revenue ($1.10 × 5,400) | | | 5,940 |
| | | | | | |
| | | Cost of goods sold | | 2,203 | |
| | | Finished goods inventory | | | 2,203 |

(90-120 minutes) **P 2-33B**

***Reqs. 1 and 2***

**General Ledger:**

**Cash**

| | | | |
|---|---|---|---|
| Bal. | 15,000 | (b) | 28,000 |
| (a) | 153,000 | (c) | 41,000 |
| | | (f) | 37,200 |
| Bal. | 61,800 | | |

**Accounts Receivable**

| | | | |
|---|---|---|---|
| Bal. | 185,000 | (a) | 153,000 |
| (k) | 105,000 | | |
| Bal. | 137,000 | | |

**Materials Inventory**

| | | | |
|---|---|---|---|
| Bal. | 6,000 | (e) | 10,250 |
| (d) | 9,200 | | |
| Bal. | 4,950 | | |

**Work in Process Inventory**

| | | | |
|---|---|---|---|
| Bal. | 39,500 | (j) | 46,960 |
| (e) | 8,450 | | |
| (g) | 22,500 | | |
| (i) | 18,000 | | |
| Bal. | 41,490 | | |

**Finished Goods Inventory**

| | | | |
|---|---|---|---|
| Bal. | 20,200 | (k) | 46,960 |
| (j) | 46,960 | | |
| Bal. | 20,200 | | |

**Plant Assets**

| | | | |
|---|---|---|---|
| Bal. | 270,000 | | |

**Accumulated Depreciation**

| | | | |
|---|---|---|---|
| | | Bal. | 76,000 |
| | | (h) | 3,300 |
| | | Bal. | 79,300 |

**Accounts Payable**

| | | | |
|---|---|---|---|
| (c) | 41,000 | Bal. | 129,000 |
| | | (d) | 9,200 |
| | | Bal. | 97,200 |

**Wages Payable**

| | | | |
|---|---|---|---|
| (f) | 37,200 | Bal. | 2,900 |
| | | (g) | 37,000 |
| | | Bal. | 2,700 |

**Common Stock**

| | | | |
|---|---|---|---|
| | | Bal. | 145,000 |

***Reqs. 1 and 2***

**General Ledger:**

**Retained Earnings**

| | | | |
|---|---|---|---|
| | | Bal. | 182,800 |

**Sales Revenue**

| | | | |
|---|---|---|---|
| | | (k) | 105,000 |

**Cost of Goods Sold**

| | | | |
|---|---|---|---|
| (k) | 46,960 | | |
| (l) | 1,600 | | |
| Bal. | 48,560 | | |

**Manufacturing Wages**

| | | | |
|---|---|---|---|
| (f) | 37,000 | (g) | 37,000 |
| Bal. | | 0 | |

**Manufacturing Overhead**

| | | | |
|---|---|---|---|
| (e) | 1,800 | (i) | 18,000 |
| (g) | 14,500 | (l) | 1,600 |
| (h) | 3,300 | | |
| Bal. | 0 | | |

**Marketing and General Expenses**

| | | | |
|---|---|---|---|
| (b) | 28,000 | | |

**Materials subledger:**

**Paper**

| | | | |
|---|---|---|---|
| Bal. | 4,600 | (e) | 8,450 |
| (d) | 4,600 | | |
| Bal. | 750 | | |

**Indirect Materials**

| | | | |
|---|---|---|---|
| Bal. | 1,400 | (e) | 1,800 |
| (d) | 4,600 | | |
| Bal. | 4,200 | | |

***Reqs. 1 and 2***

**Work in Process subledger:**

**Job 120**

| | | | |
|---|---|---|---|
| Bal. | 39,500 | (j) | 46,960 |
| (e) | 800 | | |
| (g) | 3,700 | | |
| (i) | 2,960 | | |
| Bal. | 0 | | |

**Job 121**

| | | | |
|---|---|---|---|
| (e) | 7,650 | | |
| (g) | 18,800 | | |
| (i) | 15,040 | | |
| Bal. | 41,490 | | |

**Finished Goods subledger:**

**Large Stars**

| | | | |
|---|---|---|---|
| Bal. | 7,900 | (k) | 46,960 |
| (j) | 46,960 | | |
| Bal. | 7,900 | | |

**Small Stars**

| | | | |
|---|---|---|---|
| Bal. | 12,300 | | |
| Bal. | 12,300 | | |

*Req. 3*

| Mighties' Stars | | |
|---|---|---|
| Trial Balance | | |
| September 30, 2010 | | |
| ACCOUNT | DEBIT | CREDIT |
| Cash | $61,800 | |
| Accounts receivable | 137,000 | |
| Inventories: | | |
| Materials | 4,950 | |
| Work in process | 41,490 | |
| Finished goods | 20,200 | |
| Plant assets | 270,000 | |
| Accumulated depreciation | | $79,300 |
| Accounts payable | | 97,200 |
| Wages payable | | 2,700 |
| Common stock | | 145,000 |
| Retained earnings | | 182,800 |
| Sales revenue | | 105,000 |
| Cost of goods sold | 48,560 | |
| Manufacturing wages | — | |
| Manufacturing overhead | — | |
| Marketing and general expenses | 28,000 | |
| | $612,000 | $612,000 |

*Req. 4*

| Mighties' Stars<br>Schedule of Cost of Goods Manufactured<br>Month Ended September 30, 2010 | | |
|---|---|---|
| Beginning work in process inventory | | $ 39,500 |
| Add: Current manufacturing costs: | | |
| Direct materials used | $ 8,450 | |
| Direct labor | 22,500 | |
| Manufacturing overhead allocated | 18,000 | |
| Total manufacturing costs incurred | | |
| during the month | | 48,950 |
| Total manufacturing costs to account for | | 88,450 |
| Ending work in process inventory | | (41,490) |
| Cost of goods manufactured | | $ 46,960 |

*Req. 5*

| Mighties' Stars<br>Income Statement<br>Month Ended September 30, 2010 | | |
|---|---|---|
| Sales revenue | | $105,000 |
| Cost of goods sold: | | |
| Beginning finished goods inventory | $ 20,200 | |
| Cost of goods manufactured | 46,960 | |
| Cost of goods available for sale | 67,160 | |
| Ending finished goods inventory | (20,200) | |
| Unadjusted cost of goods sold | 46,960 | |
| Adjustment for underallocated | | |
| manufacturing overhead | 1,600 | |
| Adjusted cost of goods sold | | 48,560 |
| Gross profit | | 56,440 |
| Marketing and general expenses | | 28,000 |
| Operating income | | $ 28,440 |

(25-35 minutes) **P 2-34B**

***Req. 1***

**Predetermined manufacturing overhead rate:**

$$\frac{\text{Total estimated manufacturing overhead costs}}{\text{Total estimated machine hours}}$$

$$\frac{\$214{,}000}{26{,}000\text{ hours}} = \$8.23 \text{ / machine hour}$$

***Req. 2***

**Allocated = $8.23 × 32,500 = $267,745**

**Manufacturing Overhead**

| | | | |
|---|---|---|---|
| | 28,500 | 267,475 | Allocated |
| | 49,000 | | |
| | 45,000 | | |
| | 97,850 | | |
| | 83,000 | | |
| Balance | 35,875 | | |

***Req. 3***

| Journal | | | | | |
|---|---|---|---|---|---|
| DATE | | ACCOUNTS AND EXPLANATIONS | POST. REF. | DEBIT | CREDIT |
| | | Cost of goods sold | | 35,875 | |
| | | Manufacturing overhead | | | 35,875 |
| | | To close underallocated manufacturing | | | |
| | | overhead to cost of goods sold | | | |

***Req. 4***

**The actual manufacturing overhead rate is not known until the end of the period. Managers need to make decisions throughout the period. Accountants use predetermined overhead rates to give managers product cost information when they need it --- today.**

**(20-25 minutes) P 2-35B**

***Req. 1***

**Predetermined indirect cost allocation rate:**

$$\frac{\text{Estimated indirect costs}}{\text{Estimated direct labor costs}} = \frac{\$\ 250{,}000}{\$1{,}000{,}000}$$

**Predetermined indirect cost allocation rate = 25%**

***Req. 2***

| Crow Design, Inc. | | |
|---|---|---|
| Estimated Cost of Dining Coop and Mesilla Chocolates Jobs | | |
| | Dining Coop | Mesilla Chocolates |
| Direct Costs: | | |
| Direct labor* | | |
| 770 hr. × $160 | $123,200 | |
| 40 hr. × $160 | | $6,400 |
| Software licensing costs | 2,000 | 300 |
| Travel | 10,000 | — |
| Total Direct Costs | 135,200 | 6,700 |
| Indirect Costs: | | |
| 0.25 × $123,200 | 30,800 | |
| 0.25 × $6,400 | | 1,600 |
| Total Cost | $166,000 | $8,300 |

**Direct labor cost per hour:**
**= $1,000,000/ 6,250 hours = $160/hour**

***Req. 3***

| | | |
|---|---|---|
| **Sales revenue − Total cost** | **=** | **0.20 × Sales revenue** |
| **0.80 × Sales revenue** | **=** | **Total cost** |

$$\text{Sales revenue} = \frac{\text{Total cost}}{0.80}$$

**Dining Coop:**

$$\frac{\$166{,}000}{0.80} = \underline{\underline{\$207{,}500}}$$

**Mesilla Chocolates:**

$$\frac{\$8{,}300}{0.80} = \underline{\underline{\$10{,}375}}$$

***Req. 4***

**Crow Design assigns costs to jobs to help the company <u>set fees</u> (selling prices) that cover all costs and contribute to profit. Assigning costs to <u>individual clients</u> also can help Crow Design *control costs*. If some costs appear too high, Crow Design can try to correct any inefficiencies.**

## (10 minutes) E 2-36

*Req. 1*

| | |
|---|---|
| Total cost of Feimer Job: | |
| Direct materials………………………………... | $ 400 |
| Direct labor…………………………………... | 900 |
| Manufacturing overhead…………………….. | 360 |
| Total cost of Feimer Job ……………………….. | $1,660 |

*Req. 2*

| | |
|---|---|
| Price paid for the job…..…………………………... | $2,500 |
| Less: total cost of job……..……………………….. | 1,660 |
| Profit of Feimer Job …………………………….. | $ 840 |

(20-25 minutes) **P 2-37**

***Req. 1***

$$\text{Indirect cost allocation rate} = \frac{\$260{,}000}{\$1{,}000{,}000} = \underline{\underline{26\%}}$$

***Req. 2***

| Haupt Consulting | | |
|---|---|---|
| **Estimated Cost of Owen's Trains and Caleigh's Cookies Jobs** | | |
| | **Owen's Trains** | **Caleigh's Cookies** |
| **Direct Costs:** | | |
| Direct labor* | | |
| 700 hr. × $200 | $140,000 | |
| 100 hr. × $200 | | $20,000 |
| Meal – per diem | 2,200 | 500 |
| Travel | 9,000 | — |
| **Total Direct Costs** | 151,200 | 20,500 |
| **Indirect Costs:** | | |
| 0.26 × $140,000 | 36,400 | |
| 0.26 × $ 20,000 | | 5,200 |
| **Total Cost** | $187,600 | $25,700 |

* Direct labor per hour = $1,000,000/5,000 hours = $200/hour

***Req. 3***

| | | |
|---|---|---|
| **Sales revenue − Total cost** | **=** | **Profit** |
| **Sales revenue − Total cost** | **=** | **0.25 × Sales revenue** |
| **0.75 × Sales revenue** | **=** | **Total cost** |

$$\text{Sales revenue} = \frac{\text{Total cost}}{0.75}$$

**Owen's Trains:**

$$\frac{\$187{,}600}{0.75} = \underline{\underline{\$250{,}133}}$$

**Caleigh's Cookies:**

$$\frac{\$25{,}700}{0.75} = \underline{\underline{\$34{,}267}}$$

***Req. 4***

**Haupt assigns costs to jobs to help the company *set fees* (selling prices) that cover all costs and contribute to profit. Assigning costs to *individual clients* can also help Haupt control costs.**

## (20-30 minutes) Decision Case 1

***Req. 1***

**Based on the information provided by, all cost increases for direct labor and direct materials seem reasonable for Hiebert Chocolate, Ltd., however, it is difficult to understand how the indirect costs impacting manufacturing overhead would increase by 10% (($1.10-1.00)/$1.00)) with no indication of what caused those increases. It appears the overhead rate is based on direct labor cost as this rate increased the same percentage as did the cost of direct labor. The company should adjust the predetermined rate so that it accurately reflects the overhead cost.**

***Req. 2***

**The costs for direct labor and direct materials seem to be different enough to justify a second job to be created. In addition, the timing required additional effort also justifying treatment as a second job.**

***Req. 3***

**If the cost increases are assumed to be accurate, it would be correct for Hiebert to increase the sale price especially given that the second order required a separate production run. Using the same markup on cost, a reasonable price would be $22.60 for the second batch. Not increasing the sale price may cause a drop in gross margin and possible operating losses for Hiebert. However, given that Goforth and Leos are the largest client, Hiebert should consider keeping the $20 price intact for the second order to avoid causing customer relationship problems.**

## (20-30 minutes) Decision Case 2

***Req. 1***

**Using the President's proposal, it is likely that using a monthly predetermined manufacturing overhead rate could actually be more accurate, taking into account weather changes, especially those months that would deviate from the norm. The disadvantage lies in the cost and time involved of continually updated the rate on a monthly basis.**

***Req. 2***

**If it does not cause significant more work, the Controller should try to prepare a monthly update of the predetermined overhead allocation rate.**

## (20-30 minutes) Ethical Issue

***Req. 1***

**Since manufacturing overhead should only include costs that are directly attributable to manufacturing, the cost should include only 'product' cost amounts. Cost such as design, and customer service should be covered by the gross margin generated on each sale. Overstating overhead would require adding the required profit margin to a higher, inflated cost. In turn, the bid price would be inflated and not competitive to others that exclude such costs. It would be difficult to win any future bids.**

***Req. 2***

**The parties involved in Paul York's dilemma include the cost accountant, Tony Hayes, and the President, Bryon Wilson. Others that could be impacted could include the sales executives associated with CompWest.com bid. On alternative is for Paul to schedule a meeting with Bryon to discuss appropriate industry practices for determining which costs should be included in manufacturing overhead. If the President is unwilling to address this issue, using this practice will invariably cause a disproportionate number of lost bids associated with their competitors.**

## (20-25 minutes) Financial Statement Case-Amazon.com

***Req. 1***

**Amazon.com most likely uses a hybrid of cost and process costing. Because most of the customer orders are unique with the nature and number of products in each order differing, this warrants a job order costing system. However, there are likely several processes involved from taking the customer's order to getting the goods shipped out. A hybrid method could accommodate both methods.**

**Amazon's 'Description of Business' from Note 1 of Amazon.com's 2008 annual report follows:**

> **Amazon.com opened its virtual doors on the World Wide Web in July 1995 and we offer Earth's Biggest Selection. We seek to be Earth's most customer-centric company for three primary customer sets: consumer customers, seller customers and developer customers. We serve our consumer customers through our retail websites and focus on selection, price, and convenience. We offer programs that enable seller customers to sell their products on our websites and their own branded websites and to fulfill orders through us. We serve developer customers through Amazon Web Services, which provides access to technology infrastructure that developers can use to enable virtually any type of business. In addition, we generate revenue through co-branded credit card agreements and other marketing and promotional services, such as online advertising. We have organized our operations into two principal segments: North America and International. See "Note 13—Segment Information."**

# (continued) Financial Statement Case-Amazon.com

***Req. 2***

**The amount of inventory that Amazon.com holds at December 31, 2008 is $1.399 billion.**

**The footnote for inventories indicates that the inventory balance includes those inventories that "are available for sale." Accordingly, since Amazon.com sells finished goods, the costs consist of those items acquired from distribution and suppliers which includes the merchandise cost, freight costs to acquire the inventory, and any repackaging costs.**

## (20-30 minutes) Team Project

***Req. 1***

*a.* **Cost of flight 1247**
**[142 × 1,000 miles × $0.084] + [142 × $10] = $13,348**

*b.* **Revenue per one way flight = 142 × $102 = $14,484**

*c.* **Profit per flight = $14,484 - $13,348 = $1,136**

***Req. 2***

*a.* **Cost of flight 53**
**[162 × 1,000 miles × $0.053] + [162 × $5] = $9,396**

*b.* **Revenue per one way flight = 162 × $75 = $12,150**

*c.* **Profit per flight = $12,150 - $9,396 = $2,754**

***Req. 3***

**Given the fact that JetBlue is generating more profit per flight, Delta should not simply 'do nothing.' If one airline can earn more profit, then other airlines should be able to do the same. If the VP of Marketing's comments are to be implemented, Delta will need to examine what costs are included in the per mile rate. Delta might consider charging for certain conveniences, such as meals. It may also consider changing from a meal to a snack which can save $710 per flight. In addition, increasing the number of seats per plane may also be another way to enhance revenue to better compete against JetBlue. This option will require additional capital costs to remodel the plane's interior. Waiting until the other airlines**

**run out of money is the least favorable of the options because given JetBlue's profit, Delta will likely have financial problems well before JetBlue. The most significant issue would be to gain a better understanding of the costs and determine what can be done to reduce costs.**

***Req. 4***

**Considerations that Delta has to evaluate and improve to better compete against budget carriers may include:**

- **Pilot, maintenance, and flight attendant union contracts and related costs**
- **Interest expense on long term debt to finance planes or imputed interest on long term leasing costs**
- **Hedging strategies around fuel purchases**
- **Airport fee structures and the cost of maintaining certain routes or hubs**
- **Back office support headcounts and evaluation of cost metrics comparable to other airlines**