### Problem 1: Solution

January 20X7
Sales $100,400

Expenses:
- Labor--fixed $12,000
- Labor $18,000 17.93%
- Cost of Sales $36,000 35.86%
- Supplies $3,200 3.19%
- Energy $2,620 2.61%
- Promotion $1,300 1.29%
- Maintenance--fixed $2,000
- Maintenance $1,200 1.20%
- Property taxes $800
- Depreciation $1,000
- Rent $850
- Insurance $625
Subtotal $79,595
Net Income $20,805

1.) Sales Increase = 10%
Fixed costs increase = 5%
Variable costs remain the same.

January 20X8
Sales $110,440

Expenses:
- Labor--fixed $12,600
- Labor $19,800
- Cost of Sales $39,600
- Supplies $3,520
- Energy $2,882
- Promotion $1,430
- Maintenance--fixed $2,100
- Maintenance $1,320
- Property taxes $840
- Depreciation $1,050
- Rent $893
- Insurance $656
Subtotal $86,691
Net Income $23,749
**Problem 2: Solution**

Rooms Available = 100
Expected Paid Occ % = 80%
Double Room Occ % = 80%
Single Room Occ % = 20%
ADR = $100
Price of Double Rooms = $10 more than single rooms
Room Revenue = 95% of total revenue
Other Revenue = 5% of total revenue

Room Expenses:
- Fixed: $5,000
- Variable: $8 per room sold

Other Expenses:
- A&G: $4,000, 4%
- Sales and marketing: $1,000, 5%
- Property operation and maintenance: $3,000
- Energy costs: $1,000, 2%
- Insurance: $2,000
- Property taxes: $2,000
- Depreciation: $2,500
- Interest: $1,800
- Income tax: 25% of pretax income

80 rooms will be sold each night. 16 will be single occupied and 64 will be double occupied:

\[
\begin{align*}
$8,000(80 \text{ rooms} \times $100 \text{ ADR}) &= 16x + 64(x + $10) \\
$8,000 &= 16x + 64x + $640 \\
$7,360 &= 80x \\
x &= $92.00
\end{align*}
\]

Revenue:
- Rooms: \((64 \times $102 + 16 \times $92) \times 31 = $248,000.00\)
- Other Revenue: \((248,000 / .95) - 248,000 = $13,052.63\)
- Total Revenues: $261,052.63

Variable Expenses:
- Rooms: 31 days 80 rooms/day \times $8 = $19,840.00
- A&G: 4% \times total revenue = $10,442.11
- Sales & Marketing: 5% \times total revenue = $13,052.63
- Energy costs: 2% \times total revenue = $5,221.05
Problem 2: Solution (continued)

Fixed Expenses:
- Rooms $5,000
- A&G $4,000
- Sales and Marketing $1,000
- Property operation and maintenance $3,000
- Energy costs $1,000
- Insurance $2,000
- Property taxes $2,000
- Depreciation $2,500
- Interest $1,800
- Total Expenses $70,855.79
- Earnings Before Tax $190,196.84
- Income Tax (25%) $47,549.21
- Net Income $142,647.63

Problem 3: Solution

Expected trends into 20X4:

Rooms sold: The increase for past two years has been 30 rooms sold per year. Therefore, project 2,190 rooms to be sold during 20X4.

ADR has increased by $2 per year for the past two years. Therefore, project an ADR for 20X4 of $51.

Projected sales for April 20X4:

April sales = projected ADR × expected number of rooms to be sold = $51 × 2,190 = $111,690

Problem 4: Solution

Breakfast sales:
- There are five Mondays during June and four Tuesdays-Saturdays.
- Breakfast turnover × number of days × average food service check × number of seats = breakfast sales

Breakfast sales = \[(1.3 \times 5) + (1.2 + 1.4 + 1.4 + 1.3 + .5) \times 4\] \times 4.25 \times 50
  = $6,311.25

Lunch sales = \[(1.5 \times 5) + (1.3 + 1.4 + 1.2 + 1.3 + .8) \times 4\] \times 6.85 \times 50
  = $10,788.75

Dinner sales = [(.5 \times 5) + (.6 + .6 + .5 + 1 + 1.5) \times 4] \times 10.50 \times 50
  = $10,132.50
Problem 5: Solution

1. Budget variance = actual sales - budgeted sales

<table>
<thead>
<tr>
<th>Meals</th>
<th>Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>3,000</td>
<td>$5.50</td>
</tr>
<tr>
<td>Actual</td>
<td>3,200</td>
<td>5.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Volume variance = difference in meals × budgeted price
   Volume variance = 200 × $5.50 = **$1,100.00**

3. Price variance = diff. in price × budgeted meals to be sold
   Price variance = $.25 × 3,000 = **$750.00**

Problem 6: Solution

<table>
<thead>
<tr>
<th></th>
<th>Budget</th>
<th>Actual</th>
<th>Variance</th>
<th>% Variance</th>
<th>S/NS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room Sales</td>
<td>$200,000</td>
<td>$196,000</td>
<td>-$4,000</td>
<td>-2.00%</td>
<td>NS</td>
</tr>
<tr>
<td>Food Sales</td>
<td>$ 50,000</td>
<td>$ 56,000</td>
<td>$ 6,000</td>
<td>12.00%</td>
<td>S</td>
</tr>
<tr>
<td>Cost of Food Sold (V)</td>
<td>$ 15,000</td>
<td>$ 16,000</td>
<td>-$1,000</td>
<td>-6.67%</td>
<td>S</td>
</tr>
<tr>
<td>Labor (F)</td>
<td>$ 10,000</td>
<td>$  9,700</td>
<td>$  300</td>
<td>3.00%</td>
<td>S</td>
</tr>
<tr>
<td>Labor (V)</td>
<td>$ 15,000</td>
<td>$ 15,200</td>
<td>-$ 200</td>
<td>-1.33%</td>
<td>NS</td>
</tr>
<tr>
<td>Supplies (V)</td>
<td>$  2,500</td>
<td>$  2,700</td>
<td>-$ 200</td>
<td>-8.00%</td>
<td>NS</td>
</tr>
<tr>
<td>Franchise Fees (V)</td>
<td>$  4,000</td>
<td>$  4,480</td>
<td>-$ 480</td>
<td>-12.00%</td>
<td>NS</td>
</tr>
<tr>
<td>Depreciation (F)</td>
<td>$  6,000</td>
<td>$  6,000</td>
<td>$    0</td>
<td>0.00%</td>
<td>NS</td>
</tr>
<tr>
<td>Insurance (F)</td>
<td>$  2,000</td>
<td>$  2,050</td>
<td>-$   50</td>
<td>-2.50%</td>
<td>NS</td>
</tr>
<tr>
<td>Property taxes (F)</td>
<td>$  3,000</td>
<td>$  3,000</td>
<td>$    0</td>
<td>0.00%</td>
<td>NS</td>
</tr>
</tbody>
</table>

Problem 7: Solution

1. Budget Variance
   Budgeted $ 8,400.00
   Actual $ 8,892.00
   Variance $ (492.00) (U)

2. The budget variance is significant. Variable wages were 5.8% higher than budgeted and were $492 over the budgeted amount.

3. John did a good job managing the room attendants because the room attendants averaged 2.0175 rooms per hour worked and were paid $0.20 less per hour than budgeted. This translates into savings of $310 in variable wages for the month of June.

Calculations:

\[ RV = (8.00-7.80)(1150) = 230 \ (F) \]
\[ EV = (1150-1140)(8.0) = 80 \ (F) \]
\[ Total = $310 \ (F) \]
**Problem 8: Solution**

1. **Waverly Motor Hotel**  
   **Rooms Department Budget**  
   **For the year of 20X6**

   Sales $1,368,750
   Labor: Variable $136,875  
       Fixed $100,000  
   Other operating expenses $68,438

   **Department Income** $1,063,437

\[ \begin{align*}
1. & \quad 0.75 \times 100 \times 365 \times 50 = 1,368,750 \\
2. & \quad 0.75 \times 100 \times 365 \times 5 = 136,875 \\
3. & \quad 0.75 \times 100 \times 365 \times 2.50 = 68,437.50 \text{ (use } 68,438) \\
\end{align*} \]

2. \[ \frac{1,063,437}{1,368,750} = 77.69\% \]

Based on the dual criteria of departmental income of at least $1,000,000 and a contribution margin of at least 75%, Ms. Jackson's budget is acceptable.

**Problem 9: Solution**

1. **Room sales for June 20X1**
   - Doubles $147,000  
     \[ 49 \times 30 \times 100 \]
   - Singles $43,200  
     \[ 18 \times 30 \times 80 \]
   - **Total** $190,200

2. **Breakfast sales for June 20X1**
   - Doubles $2,568.96  
     \[ 2,676 \times .2 \times 4.80 \]
   - Singles $1,036.80  
     \[ 18 \times .4 \times 30 \times 4.80 \]
   - **Total** $3,605.76

3. **Lunch sales for June 20X1**
   - Monday $1,875  
     \[ 50 \times 1.25 \times 6 \times 5 \]
   - Tuesday $1,875  
     \[ 50 \times 1.25 \times 6 \times 5 \]
   - Wednesday $1,500  
     \[ 50 \times 1.25 \times 6 \times 4 \]
   - Thursday $1,500  
     \[ 50 \times 1.25 \times 6 \times 4 \]
   - Friday $1,500  
     \[ 50 \times 1.25 \times 6 \times 4 \]
   - Saturday $650  
     \[ 50 \times .5 \times 6.50 \times 4 \]
   - Sunday $2,100  
     \[ 50 \times 1.5 \times 7 \times 4 \]
   - **Total** $11,000

**Calculations for Part 2 Doubles:**

- Rooms sold: \[(49 \times 30)+(18 \times 30)\] 2,010
- Average number of guests per room: \[x 1.6\]
- Total number of guests: 3,216
- Guests: Staying in singles \[(18 \times 30)\] 540
- Guests: Staying in doubles 2,676
Problem 10: Solution

Part 1

Shives
Condensed Budget

<table>
<thead>
<tr>
<th></th>
<th>$700,000</th>
<th>$1,000,000</th>
<th>$1,300,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of food sold</td>
<td>315,000</td>
<td>450,000</td>
<td>585,000</td>
</tr>
<tr>
<td>Labor:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>161,000</td>
<td>230,000</td>
<td>299,000</td>
</tr>
<tr>
<td>Fixed</td>
<td>80,000</td>
<td>80,000</td>
<td>80,000</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>56,000</td>
<td>80,000</td>
<td>104,000</td>
</tr>
<tr>
<td>Income before fixed charges</td>
<td>88,000</td>
<td>160,000</td>
<td>232,000</td>
</tr>
<tr>
<td>Fixed charges</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Income before income taxes</td>
<td>(12,000)</td>
<td>60,000</td>
<td>132,000</td>
</tr>
<tr>
<td>Income taxes</td>
<td>-0-</td>
<td>18,000</td>
<td>39,600</td>
</tr>
<tr>
<td>Net income (loss)</td>
<td>$(12,000)</td>
<td>$42,000</td>
<td>$92,400</td>
</tr>
</tbody>
</table>

Part 2

When sales are $750,000, Shives breaks even based on CVP analysis. When sales are $700,000, the bottom line is a $12,000 loss, while sales of $1,000,000 and $1,300,000 result in projected net incomes of $42,000 and $92,400, respectively.

Problem 11: Solution

Revenues:

Saturday:
\[ [53 \times .5 \times 100 \times (8.2 \times 1.1)] + [53 \times 1.5 \times 100 \times (12.2 \times 1.1)] = \$130,592 \]

Sunday:
\[ [53 \times 1.5 \times 100 \times (8.2 \times 1.1)] + [53 \times .5 \times 100 \times (12.2 \times 1.1)] = \$107,272 \]

Monday–Friday:
\[ 52 \times 5 \times 1.5 \times 100 \times (8.2 \times 1.1) + 52 \times 5 \times .75 \times 100 \times (12.2 \times 1.1) = \$613,470 \]

Total $851,334

Departmental Expenses

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Cost</td>
<td>32%</td>
<td>$272,427</td>
</tr>
<tr>
<td>Labor</td>
<td>32%</td>
<td>$272,427</td>
</tr>
<tr>
<td>Controllable</td>
<td>15%</td>
<td>$127,700</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$672,554</td>
</tr>
</tbody>
</table>

Income Before Fixed Charges $178,780

Fixed Charges $150,000

Income Before Taxes $28,780

Income Taxes 30% $8,634

Net Income $20,146
### Problem 12: Solution

#### Mica Motel Operating Budget

<table>
<thead>
<tr>
<th></th>
<th>Revenue</th>
<th>Sales</th>
<th>Payroll &amp; Related Exp.</th>
<th>Expenses</th>
<th>Income (Loss)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rooms</td>
<td>$507,204</td>
<td>-0-</td>
<td>$101,441</td>
<td>$50,720</td>
<td>$355,043</td>
</tr>
<tr>
<td>Food</td>
<td>367,344</td>
<td>128,570</td>
<td>117,550</td>
<td>44,081</td>
<td>77,143</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$874,548</td>
<td>$128,570</td>
<td>$218,991</td>
<td>$94,801</td>
<td>$432,186</td>
</tr>
</tbody>
</table>

Undistributed operating expenses $187,455<br>
Income before fixed charges 244,731<br>
Property taxes 30,000<br>
Interest expense 50,000<br>
Depreciation 60,000<br>
Income before income taxes 104,731<br>
Income taxes 31,419<br>
Net income $73,312

Note: All numbers are rounded to the nearest $1.

#### Selected Calculations

1. **Rooms revenue:**
   - Doubles: $404,712
   - Singles: $102,492
   - **Total:** $507,204

2. **Food revenue:**
   - Breakfast: $27,474
   - Lunch: $114,975
   - Dinner: $224,895
   - **Total:** $367,344

3. **U.O.E.:**
   - Fixed: $100,000
   - Variable: 874,548 × .1 = 87,455
   - **Total:** 187,455

4. **Doubles:** $60 × 365 × .84 × 22 = 404,712

5. **Singles:** $20 × 365 × .78 × 18 = 102,492
**Problem 12: Solution** (continued)

(6) Guests eating breakfast

Singles: $20 \times 365 \times .78 = 5,694$
Doubles: $60 \times 365 \times .84 = 18,396$

Rooms sold 24,090

Average occupancy per room $\times 1.8$

Hotel guests 43,362

Guests staying in singles - 5,694

Guests staying in doubles 37,668

Guests in singles who eat breakfast: $5,694 \times .40 = 2,278$

Guests in doubles who eat breakfast: $37,668 \times .20 = 7,534$

Total guests eating breakfast 9,812

Average check $\times 2.80$

Total breakfast sales $27,474$

(7) Lunch sales

<table>
<thead>
<tr>
<th>Lunch</th>
<th>Days</th>
<th>Seats</th>
<th>Turnover</th>
<th>Average Check</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>53</td>
<td>60</td>
<td>1.25</td>
<td>4.20</td>
<td>$16,695</td>
</tr>
<tr>
<td>T</td>
<td>52</td>
<td>60</td>
<td>1.25</td>
<td>4.20</td>
<td>16,380</td>
</tr>
<tr>
<td>W</td>
<td>52</td>
<td>60</td>
<td>1.25</td>
<td>4.20</td>
<td>16,380</td>
</tr>
<tr>
<td>Th</td>
<td>52</td>
<td>60</td>
<td>1.25</td>
<td>4.20</td>
<td>16,380</td>
</tr>
<tr>
<td>F</td>
<td>52</td>
<td>60</td>
<td>1.25</td>
<td>4.50</td>
<td>7,020</td>
</tr>
<tr>
<td>S</td>
<td>52</td>
<td>60</td>
<td>.5</td>
<td>4.50</td>
<td>7,020</td>
</tr>
<tr>
<td>Su</td>
<td>52</td>
<td>60</td>
<td>1.5</td>
<td>5.50</td>
<td>25,740</td>
</tr>
<tr>
<td></td>
<td>365</td>
<td></td>
<td></td>
<td></td>
<td><strong>$114,975</strong></td>
</tr>
</tbody>
</table>

(8) Dinner sales

M-F $10.75 \times 60[(52 \times 4) + 53] = $168,435$

S $12.50 \times 60 \times 52 = 39,000$

Su $11.25 \times 30 \times 52 = 17,550$

Total $224,895$
Problem 13: Solution

Seats Available = 150
Meal Price Increase = 5%
Increase in Seat t/o = 0.1
Appetizers = 4% Of total sales
Desserts = 6% Of total sales

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Lunch</th>
<th>Dinner</th>
<th>Lunch</th>
<th>Dinner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>1.0</td>
<td>0.5</td>
<td>$12.40</td>
<td>$15.00</td>
</tr>
<tr>
<td>Monday</td>
<td>2.2</td>
<td>1.0</td>
<td>$10.95</td>
<td>$14.20</td>
</tr>
<tr>
<td>Tuesday</td>
<td>2.1</td>
<td>1.1</td>
<td>$10.80</td>
<td>$14.30</td>
</tr>
<tr>
<td>Wednesday</td>
<td>2.0</td>
<td>1.2</td>
<td>$10.70</td>
<td>$14.40</td>
</tr>
<tr>
<td>Thursday</td>
<td>2.1</td>
<td>1.3</td>
<td>$10.80</td>
<td>$14.50</td>
</tr>
<tr>
<td>Friday</td>
<td>2.2</td>
<td>0.8</td>
<td>$10.95</td>
<td>$16.90</td>
</tr>
<tr>
<td>Saturday</td>
<td>0.5</td>
<td>0.4</td>
<td>$9.50</td>
<td>$15.20</td>
</tr>
</tbody>
</table>

1. Budgeted Sales

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Lunch Sales</th>
<th>Dinner Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>$2,148.30</td>
<td>$1,417.50</td>
</tr>
<tr>
<td>Monday</td>
<td>$3,966.64</td>
<td>$2,460.15</td>
</tr>
<tr>
<td>Tuesday</td>
<td>$3,742.20</td>
<td>$2,702.70</td>
</tr>
<tr>
<td>Wednesday</td>
<td>$3,539.03</td>
<td>$2,948.40</td>
</tr>
<tr>
<td>Thursday</td>
<td>$3,966.64</td>
<td>$2,395.58</td>
</tr>
<tr>
<td>Friday</td>
<td>$3,966.64</td>
<td>$1,197.00</td>
</tr>
<tr>
<td>Saturday</td>
<td>$897.75</td>
<td>$1,197.00</td>
</tr>
</tbody>
</table>

2. April budgeted sales = 5 × Monday sales + 5 × Tuesday sales + 4 × Wednesday sales + 4 × Thursday sales + 4 × Friday sales + 4 × Saturday sales + 4 × Sunday sales = 90 %, not including appetizers or desserts = $163,277.89

Meal sales = $163,277.89 / .90 = $181,419.88

Appetizer sales = 4% × meal sales = $7,256.80
Dessert sales = 6% × meal sales = $10,885.19

Problem 14: Solution

1. Budget Variance

<table>
<thead>
<tr>
<th>Rooms</th>
<th>Hours</th>
<th>Rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>1,000</td>
<td>600</td>
<td>$3.40</td>
</tr>
<tr>
<td>Actual</td>
<td>1,050</td>
<td>660</td>
<td>3.30</td>
</tr>
</tbody>
</table>

2. Volume Variance

Volume Variance = BR(BT - ATAO)
= $3.40(600 - 630)
= $102 (U)

3. Efficiency Variance

Efficiency Variance = BR(ATAO - AT)
= $3.40(630 - 660)
= $102 (U)

4. Rate Variance

Rate Variance = BT(BR - AR)
= 600($3.40 - $3.30)
= $60 (F)
Problem 15: Solution

Budgeted:
Servers work standards = 10 meals per hour
Average wage rate per hour = $12.00
Variable wages budget = $4,800
Members served = 4,000

Actual:
Average wage rate paid per hour = $11.50
Variable wages paid = $5,200
Members served = 4,200

1. Budget variance for server variable wage expense:
   = $4,800 - 5,200
   = $400 (U)

2. Is the budget variance significant? Explain:

   Dollar variance = $400
   % variance = 8.33%

   The variance is probably significant, because even though the dollar amount is not high, it represents is nearly 10%. Significance is also affected by the size of the operation.

3. Rate Bill Smith's performance in managing servers. Support with specific numbers:

   Management's performance is based on rate variance and efficiency variance.

   Rate variance = Budgeted hours(Budgeted rate - actual rate)
   Efficiency variance = Budgeted rate(Allowable time for actual output - Actual time)

   Budgeted hours = 4,000 / 10 = 400
   ATAO = 4,200 / 10 = 420
   Actual time = $5,200 / $11.50 = 452.17 hours

   RV = 400($12 - $11.50) = $200.00 (F)
   EV = $12(420 - 452.17) = -$386.09 (U)
   = ($186.09) (U)

   Overall, Bill Smith fell short of the desired objective by $186.09
Problem 16: Solution

1. | Members/ Covers | Total Hours | Hourly Wage | Total |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>28,800</td>
<td>12</td>
<td>2,400</td>
</tr>
<tr>
<td>Actual</td>
<td>29,200</td>
<td>11.68</td>
<td>2,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Difference</th>
<th>(400)</th>
<th>0.32</th>
<th>(100)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>$(0.24)$</td>
</tr>
</tbody>
</table>

2. The $1,200 variance represents an 8.3% difference from the budget. With budget expenses of $14,400, 8.3% would be significant.

3. Amy’s performance has not been very good. An unfavorable volume variance of -198 is not her responsibility; however, the unfavorable rate variance of -576 reflects negatively on her ability to manage labor costs. The unfavorable efficiency variance of -402 suggests that the workers are doing less work than was forecasted. Finally, the unfavorable rate to total variance of 7.92 suggests that she has been paying more money for less productivity.

\[
VV = 6.00(2,400 - 2,433) = -198
\]
\[
RV = 2,400(6.00 - 6.24) = -576
\]
\[
EV = 6(2,433 - 2,500) = -402
\]
\[
R-TV = (2,400 - 2,500) \times (6.00 - 6.24) = 24
\]

4. Efficiency variance = $(402)
Problem 17: Solution

Part I

Budget variance/revenue analysis

<table>
<thead>
<tr>
<th>Rooms</th>
<th>Rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>800</td>
<td>$18.50</td>
</tr>
<tr>
<td>Actual</td>
<td>720</td>
<td>20.35</td>
</tr>
<tr>
<td>Difference</td>
<td>(80)</td>
<td>$1.85</td>
</tr>
</tbody>
</table>

Budget variance = $148 (U)

VV = (720 - 800) × 18.50 = -$1,480 (U)

PV = (20.35 - 18.50) × 800 = +1,480 (F)

P-VV = -80 × 1.85 = - 148 (U)

Total = -$148 (U)

Part II

Expense variance analysis

<table>
<thead>
<tr>
<th>Rooms</th>
<th>Hours</th>
<th>Rates</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>800</td>
<td>400</td>
<td>$4.00</td>
</tr>
<tr>
<td>Actual</td>
<td>720</td>
<td>380</td>
<td>3.80</td>
</tr>
<tr>
<td>Difference</td>
<td>80</td>
<td>20</td>
<td>$0.20</td>
</tr>
</tbody>
</table>

1. Efficiency variance

EV = (360 - 380) × 4 = -$80 (U)

No, the room attendants were inefficient.

2. Rate variance

RV = (4.00 - 3.80) × 400 = $80 (F)

3. The head housekeeper should be rated based on the efficiency and rate variances. Any difference in budget and actual due to volume differences should not be used to measure the head housekeeper's performance. Therefore, based on efficiency and rate, the head housekeeper has just met the budget.
### Problem 18: Solution

1. **Covers** | **Price** | **Total**
---|---|---
**Budget** | 15,000 | $6.6667 | $100,000
**Actual** | 16,000 | 6.875 | 110,000

**Volume Variance**
\[ VV = (16,000 - 15,000) (6.6667) \]
\[ = 6,666.70 \text{ (F)} \]

**Price Variance**
\[ PV = (6.875 - 6.6667) (15,000) \]
\[ = 3,124.50 \text{ (F)} \]

2. **Average Cost/ Covers**

| **Covers** | **Cover** | **Total** |
---|---|---|
**Budget** | 15,000 | $2.40 | $36,000
**Actual** | 16,000 | 2.55 | 40,800

**Cost Variance**
\[ CV = 15,000 \times (2.40 - 2.55) \]
\[ = -2,250 \text{ (U)} \]

**Volume Variance**
\[ VV = 2.40 \times (15,000 - 16,000) \]
\[ = -2,400 \text{ (U)} \]

**Cost-Volume Variance**
\[ C-VV = 1,000 \times 0.15 \]
\[ = 150 \text{ (U)} \]
### Problem 19: Solution

#### Dwight Inn

**Rooms Department Schedule**  
For the years 20X5-20X9

<table>
<thead>
<tr>
<th></th>
<th>20X5</th>
<th>20X6</th>
<th>20X7</th>
<th>20X8</th>
<th>20X9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Room Sales:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singles</td>
<td>$602,250</td>
<td>$629,351</td>
<td>$656,818</td>
<td>$684,649</td>
<td>$712,845</td>
</tr>
<tr>
<td>Doubles</td>
<td>1,779,375</td>
<td>1,846,353</td>
<td>1,914,060</td>
<td>1,982,498</td>
<td>2,051,665</td>
</tr>
<tr>
<td>Suites</td>
<td>1,022,000</td>
<td>1,057,770</td>
<td>1,093,905</td>
<td>1,130,405</td>
<td>1,167,270</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$3,403,625</td>
<td>$3,533,474</td>
<td>$3,664,783</td>
<td>$3,797,552</td>
<td>$3,931,780</td>
</tr>
<tr>
<td><strong>Payroll &amp; Related Expenses:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Labor</td>
<td>120,000</td>
<td>127,200</td>
<td>134,832</td>
<td>142,922</td>
<td>151,497</td>
</tr>
<tr>
<td>Variable Labor</td>
<td>408,435</td>
<td>424,772</td>
<td>441,763</td>
<td>459,434</td>
<td>477,811</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$528,435</td>
<td>$551,972</td>
<td>$576,595</td>
<td>$602,356</td>
<td>$629,308</td>
</tr>
<tr>
<td><strong>Other Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commissions</td>
<td>68,073</td>
<td>70,669</td>
<td>73,296</td>
<td>75,951</td>
<td>78,636</td>
</tr>
<tr>
<td>Laundry</td>
<td>68,073</td>
<td>70,669</td>
<td>73,296</td>
<td>75,951</td>
<td>78,636</td>
</tr>
<tr>
<td>Oper. Supplies</td>
<td>102,109</td>
<td>106,004</td>
<td>109,943</td>
<td>113,927</td>
<td>117,953</td>
</tr>
<tr>
<td>Linen</td>
<td>17,018</td>
<td>17,667</td>
<td>18,324</td>
<td>18,988</td>
<td>19,659</td>
</tr>
<tr>
<td>Uniforms</td>
<td>17,018</td>
<td>17,667</td>
<td>18,324</td>
<td>18,988</td>
<td>19,659</td>
</tr>
<tr>
<td>Other</td>
<td>51,054</td>
<td>53,002</td>
<td>54,972</td>
<td>56,963</td>
<td>58,977</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>851,779</td>
<td>887,650</td>
<td>924,750</td>
<td>963,123</td>
<td>1,002,828</td>
</tr>
<tr>
<td><strong>Rooms Dept. Income</strong></td>
<td>$2,551,846</td>
<td>$2,645,824</td>
<td>$2,740,033</td>
<td>$2,834,428</td>
<td>$2,928,952</td>
</tr>
</tbody>
</table>
**Problem 20: Solution**

Flexible Room Operating Budget  
Mustang Ranch  
For the year 20X4

<table>
<thead>
<tr>
<th>Activity Levels—Occupancy Percentage</th>
<th>78%</th>
<th>80%</th>
<th>82%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$5,124,600</td>
<td>$5,256,000</td>
<td>$5,387,400</td>
</tr>
</tbody>
</table>

**Payroll Costs:**

<table>
<thead>
<tr>
<th></th>
<th>78%</th>
<th>80%</th>
<th>82%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries (fixed)</td>
<td>240,000</td>
<td>240,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Wages (variable)</td>
<td>640,575</td>
<td>657,000</td>
<td>673,425</td>
</tr>
<tr>
<td>Payroll taxes</td>
<td>88,058</td>
<td>89,700</td>
<td>91,343</td>
</tr>
<tr>
<td>Fringe benefits</td>
<td>177,738</td>
<td>181,680</td>
<td>185,622</td>
</tr>
<tr>
<td><strong>Total Payroll Costs</strong></td>
<td>$1,146,371</td>
<td>$1,168,380</td>
<td>$1,190,390</td>
</tr>
</tbody>
</table>

**Other Costs:**

<table>
<thead>
<tr>
<th></th>
<th>78%</th>
<th>80%</th>
<th>82%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservations</td>
<td>$128,115</td>
<td>$131,400</td>
<td>$134,685</td>
</tr>
<tr>
<td>Commissions</td>
<td>153,738</td>
<td>157,680</td>
<td>161,622</td>
</tr>
<tr>
<td>Linen</td>
<td>102,492</td>
<td>105,120</td>
<td>107,748</td>
</tr>
<tr>
<td>Supplies</td>
<td>213,525</td>
<td>219,000</td>
<td>224,475</td>
</tr>
<tr>
<td>Other</td>
<td>262,230</td>
<td>268,800</td>
<td>275,370</td>
</tr>
<tr>
<td><strong>Total Other Costs</strong></td>
<td>$860,100</td>
<td>$882,000</td>
<td>$903,900</td>
</tr>
</tbody>
</table>

**Rooms Department Income**  
$3,118,130  $3,205,620  $3,293,111