Chapter 12 Review Guide 4/24/18

This is a suggested review guide. It is not intended to be all inclusive. You should also study the course material covered. Remember – anything in the book or covered in class is fair game!

Chapter 12

- Make or buy
- Elimination of a division
- One time special orders.
- Prioritizing products in a constrained environment.
- Dropping a product.
- Should joint products be sold at the split off point or processed further?

1. Freestone Company is considering renting Machine Y to replace Machine X. It is expected that Y will waste less direct materials than does X. If Y is rented, X will be sold on the open market. For this decision, which of the following factors is (are) relevant?

   I. Cost of direct materials used
   II. Resale value of Machine X
   A. Only I
   B. Both I and II
   C. Neither I nor II
   D. Only II

2. The management of Heider Corporation is considering dropping product J14V. Data from the company's accounting system appear below:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>$920,000</td>
</tr>
<tr>
<td>Variable Expenses</td>
<td>$377,000</td>
</tr>
<tr>
<td>Fixed Manufacturing Expenses</td>
<td>$359,000</td>
</tr>
<tr>
<td>Fixed Selling and Administrative Expenses</td>
<td>$239,000</td>
</tr>
</tbody>
</table>

   In the company's accounting system all fixed expenses of the company are fully allocated to products. Further investigation has revealed that $211,000 of the fixed manufacturing expenses and $172,000 of the fixed selling and administrative expenses are avoidable if product J14V is discontinued. What would be the effect on the company's overall net operating income if product J14V were dropped?
   A. Overall net operating income would increase by $160,000.
   B. Overall net operating income would decrease by $160,000.
   C. Overall net operating income would decrease by $55,000.
   D. Overall net operating income would increase by $55,000.
3. Lusk Company produces and sells 15,000 units of Product A each month. The selling price of Product A is $20 per unit, and variable expenses are $14 per unit. A study has been made concerning whether Product A should be discontinued. The study shows that $70,000 of the $100,000 in fixed expenses charged to Product A would continue even if the product was discontinued. These data indicate that if Product A is discontinued, the company's overall net operating income would:
   A. increase by $10,000 per month
   B. decrease by $20,000 per month
   C. decrease by $60,000 per month
   D. increase by $20,000 per month

4. Costs which are always relevant in decision making are those costs which are:
   A. fixed
   B. avoidable
   C. variable
   D. sunk

5. A study has been conducted to determine if Product A should be dropped. Sales of the product total $500,000 per year; variable expenses total $340,000 per year. Fixed expenses charged to the product total $220,000 per year. The company estimates that $180,000 of these fixed expenses will continue even if the product is dropped. These data indicate that if Product A is dropped, the company's overall net operating income would:
   A. increase by $20,000 per year
   B. increase by $40,000 per year
   C. decrease by $120,000 per year
   D. decrease by $20,000 per year

6. Power Systems Inc. manufactures jet engines for the United States armed forces on a cost-plus basis. The production cost of a particular jet engine is shown below:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$200,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>150,000</td>
</tr>
<tr>
<td>Manufacturing overhead:</td>
<td></td>
</tr>
<tr>
<td>Supervisor’s salary</td>
<td>20,000</td>
</tr>
<tr>
<td>Fringe benefits on direct labor</td>
<td>15,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>12,000</td>
</tr>
<tr>
<td>Rent</td>
<td>11,000</td>
</tr>
<tr>
<td><strong>Total cost</strong></td>
<td><strong>$408,000</strong></td>
</tr>
</tbody>
</table>

If production of this engine was discontinued, the production capacity would be idle, and the supervisor would be laid off. The depreciation referred to above is for special equipment that would have no resale value and that does not wear out through use. When asked to bid on the next contract for this engine, the minimum unit price that Power Systems should bid is:
A. $408,000
B. $397,000
C. $385,000
D. $365,000
7. A customer has requested that Inga Corporation fill a special order for 2,000 units of product K81 for $25.00 a unit. While the product would be modified slightly for the special order, product K81's normal unit product cost is $19.90:

Direct materials........................................ $ 5.60
Direct labor..............................................  4.00
Variable manufacturing overhead.............  2.70
Fixed manufacturing overhead...............  7.60
Unit product cost................................. $19.90

Direct labor is a variable cost. The special order would have no effect on the company's total fixed manufacturing overhead costs. The customer would like modifications made to product K81 that would increase the variable costs by $1.20 per unit and that would require an investment of $10,000 in special molds that would have no salvage value.

This special order would have no effect on the company's other sales. The company has ample spare capacity for producing the special order. If the special order is accepted, the company's overall net operating income would increase (decrease) by:
A. <$2,200>
B. $10,200
C. $13,000
D. <$9,700>

8. Peluso Company, a manufacturer of snowmobiles, is operating at 70% of plant capacity. Peluso's plant manager is considering making the headlights now being purchased from an outside supplier for $11 each. The Peluso plant has idle equipment that could be used to manufacture the headlights. The design engineer estimates that each headlight requires $4 of direct materials, $3 of direct labor, and $6.00 of manufacturing overhead. Forty percent of the manufacturing overhead is a fixed cost that would be unaffected by this decision. A decision by Peluso Company to manufacture the headlights should result in a net gain (loss) for each headlight of:
A. <$2.00>
B. $0.40
C. $2.80
D. $1.60
Part N29 is used by Farman Corporation to make one of its products. A total of 11,000 units of this part are produced and used every year. The company's Accounting Department reports the following costs of producing the part at this level of activity:

<table>
<thead>
<tr>
<th></th>
<th>Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$5.90</td>
</tr>
<tr>
<td>Direct labor</td>
<td>$1.70</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$5.40</td>
</tr>
<tr>
<td>Supervisor's salary</td>
<td>$2.60</td>
</tr>
<tr>
<td>Depreciation of special equipment</td>
<td>$3.20</td>
</tr>
<tr>
<td>Allocated general overhead</td>
<td>$3.30</td>
</tr>
</tbody>
</table>

An outside supplier has offered to make the part and sell it to the company for $21.20 each. If this offer is accepted, the supervisor's salary and all of the variable costs, including the direct labor, can be avoided. The special equipment used to make the part was purchased many years ago and has no salvage value or other use. The allocated general overhead represents fixed costs of the entire company, none of which would be avoided if the part were purchased instead of produced internally. In addition, the space used to make part N29 could be used to make more of one of the company's other products, generating an additional segment margin of $29,000 per year for that product. What would be the impact on the company's overall net operating income of buying part N29 from the outside supplier?

A. Net operating income would increase by $19,100 per year.
B. Net operating income would increase by $29,000 per year.
C. Net operating income would decline by $38,900 per year.
D. Net operating income would decline by $32,600 per year.

Ethridge Corporation is presently making part H25 that is used in one of its products. A total of 9,000 units of this part are produced and used every year. The company's Accounting Department reports the following costs of producing the part at this level of activity:

<table>
<thead>
<tr>
<th></th>
<th>Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$1.90</td>
</tr>
<tr>
<td>Direct labor</td>
<td>$7.70</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$1.20</td>
</tr>
<tr>
<td>Supervisor’s salary</td>
<td>$1.90</td>
</tr>
<tr>
<td>Depreciation of special equipment</td>
<td>$2.90</td>
</tr>
<tr>
<td>Allocated general overhead</td>
<td>$6.30</td>
</tr>
</tbody>
</table>
An outside supplier has offered to make and sell the part to the company for $15.40 each. If this offer is accepted, the supervisor's salary and all of the variable costs can be avoided. The special equipment used to make the part was purchased many years ago and has no salvage value or other use. The allocated general overhead represents fixed costs of the entire company, none of which would be avoided if the part were purchased instead of produced internally. If management decides to buy part H25 from the outside supplier rather than to continue making the part, what would be the annual impact on the company’s overall net operating income?

A. Net operating income would decline by $58,500 per year.
B. Net operating income would decline by $24,300 per year.
C. Net operating income would increase by $58,500 per year.
D. Net operating income would increase by $24,300 per year.

11. Consider the following production and cost data for two products, X and Y:

<table>
<thead>
<tr>
<th></th>
<th>Product X</th>
<th>Product Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution margin</td>
<td>$24</td>
<td>$18</td>
</tr>
<tr>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine-hours needed</td>
<td>3 hours</td>
<td>2 hours</td>
</tr>
</tbody>
</table>

The company has 15,000 machine hours available each period, and there is unlimited demand for each product. What is the largest possible total contribution margin that can be realized each period?

A. $125,000
B. $120,000
C. $150,000
D. $135,000

12. Payne Company makes two products, M and N, in a joint process. At the split-off point, 40,000 units of M and 50,000 units of N are available each month. Monthly joint production costs are $270,000. Product M can be sold at the split-off point for $4.20 per unit. Product N can either be sold at the split-off point for $3.20 per unit or it can be processed further and sold for $6.30 per unit. If N is processed further, additional processing costs of $2.50 per unit will be incurred.

If N is processed further and then sold, rather than being sold at the split-off point, the change in monthly operating income would be a:

A. $155,000 increase
B. $30,000 increase
C. $315,000 increase
D. $125,000 increase
13. The constraint at Mcglathery Corporation is time on a particular machine. The company makes three products that use this machine. Data concerning those products appear below:

<table>
<thead>
<tr>
<th></th>
<th>UE</th>
<th>BI</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price per unit</td>
<td>$334.96</td>
<td>$228.24</td>
<td>$198.99</td>
</tr>
<tr>
<td>Variable cost per unit</td>
<td>$259.70</td>
<td>$173.52</td>
<td>$160.05</td>
</tr>
<tr>
<td>Minutes on the constraint</td>
<td>5.30</td>
<td>3.60</td>
<td>3.30</td>
</tr>
</tbody>
</table>

Assume that sufficient time is available on the constrained machine to satisfy demand for all but the least profitable product. Up to how much should the company be willing to pay to acquire more of the constrained resource?
A. $38.94 per unit  
B. $75.26 per unit  
C. $15.20 per minute  
D. $11.80 per minute

14. When there is a production constraint, a company should emphasize the products with:
A. the highest unit contribution margins.  
B. the highest contribution margin per unit of the constrained resource.  
C. the highest contribution margin ratios.  
D. the highest contribution margins and contribution margin ratios.

15. Dunford Company produces three products with the following costs and selling prices:

<table>
<thead>
<tr>
<th></th>
<th>Product</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price per unit</td>
<td>.........</td>
<td>$40</td>
<td>$30</td>
<td>$35</td>
</tr>
<tr>
<td>Variable costs per unit</td>
<td>.........</td>
<td>24</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Contribution margin per unit</td>
<td>.........</td>
<td>$16</td>
<td>$14</td>
<td>$15</td>
</tr>
<tr>
<td>Direct labor hours per unit</td>
<td>.........</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Machine hours per unit</td>
<td>.........</td>
<td>5</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>

If Dunford has a limit of 30,000 machine hours but no limit on units sold or direct labor hours, then the ranking of the products from the most profitable to the least profitable use of the constrained resource is:
A. X, Z, Y  
B. Z, X, Y  
C. X, Y, Z  
D. Y, Z, X
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
</tr>
<tr>
<td>4</td>
<td>B</td>
</tr>
<tr>
<td>5</td>
<td>C</td>
</tr>
<tr>
<td>6</td>
<td>C</td>
</tr>
<tr>
<td>7</td>
<td>C</td>
</tr>
<tr>
<td>8</td>
<td>B</td>
</tr>
<tr>
<td>9</td>
<td>D</td>
</tr>
<tr>
<td>10</td>
<td>B</td>
</tr>
<tr>
<td>11</td>
<td>D</td>
</tr>
<tr>
<td>12</td>
<td>B</td>
</tr>
<tr>
<td>13</td>
<td>D</td>
</tr>
<tr>
<td>14</td>
<td>B</td>
</tr>
<tr>
<td>15</td>
<td>B</td>
</tr>
</tbody>
</table>