Quiz – Chapter 13 – Solution

1. Opportunity costs are:
   A) not used for decision making.
   B) the same as variable costs.
   C) the same as historical costs.
   D) relevant to decision making.

   The answer is d.

2. 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) Only II
   C) Both I and II
   D) Neither I nor II

   The answer is c. The cost savings is relevant. The money you get from selling the old machine makes your investment in the new machine less. (It is an opportunity cost.)

3. In a sell or process further decision, which of the following costs are relevant?

   I. A variable production cost incurred prior to the split-off point.
   II. An avoidable fixed production cost incurred after the split-off point.

   A) Only I.
   B) Only II.
   C) Both I and II.
   D) Neither I nor II.

   The answer is b.

   The costs up to the split off point are the same regardless of whether you sell or process further. Because they are not different, those costs are not relevant. Only the direct fixed costs (avoidable) after split off are relevant because they will go away if you sell the product rather than processing it further.
Use the following to answer questions 4-6:

The Tingey Company has 500 obsolete microcomputers that are carried in inventory at a total cost of $720,000. If these microcomputers are upgraded at a total cost of $100,000, they can be sold for a total of $160,000. As an alternative, the microcomputers can be sold in their present condition for $50,000.

4. The sunk cost in this situation is:
   A) $720,000.
   B) $160,000.
   C) $ 50,000.
   D) $100,000.

   The answer is a.

   The original cost is the sunk cost. It is not relevant to this decision.

5. What is the net advantage or disadvantage to the company from upgrading the computers rather than selling them in their present condition?
   A) $110,000 advantage.
   B) $660,000 disadvantage.
   C) $ 10,000 advantage.
   D) $ 60,000 advantage.

   The answer is c.

<table>
<thead>
<tr>
<th></th>
<th>Sell</th>
<th>Process Further</th>
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<tbody>
<tr>
<td>Revenue</td>
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<td>$160,000</td>
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<tr>
<td>Upgrade Cost</td>
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<td>-100,000</td>
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<tr>
<td></td>
<td><strong>$50,000</strong></td>
<td><strong>$60,000</strong></td>
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6. Suppose the selling price of the upgraded computers has not been set. At what selling price per unit would the company be as well off upgrading the computers as if it just sold the computers in their present condition?
   A) $100.
   B) $770.
   C) $300.
   D) $210.

   The answer is c.

   You would be indifferent if the Upgrade Option produced a net benefit of $50,000. This means that the sales price must be $150,000. Divide it by 500 computers, and you get a sales price per unit of $300.
Use the following to answer questions 7-8:

Meacham Company has traditionally made a subcomponent of its major product. Annual production of 20,000 subcomponents result in the following costs:

- Direct materials .......... $200,000
- Direct labor ............... $180,000
- Variable overhead .......... $150,000
- Fixed overhead............ $100,000

Meacham has received an offer from an outside supplier who is willing to provide 20,000 units of this subcomponent each year at a price of $28 per subcomponent. Meacham knows that the facilities now being used to make the subcomponent would be rented to another company for $75,000 per year if the subcomponent were purchased from the outside supplier. Otherwise, the fixed overhead would be unaffected.

7. If Meacham decides to purchase the subcomponent from the outside supplier, how much higher or lower will operating income be than if Meacham continued to make the subcomponent?
   A) $45,000 higher.
   B) $70,000 higher.
   C) $30,000 lower.
   D) $70,000 lower.

   The answer is a.

   The rental income from the sublease would be an opportunity cost of the Make option.

<table>
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<th>Make</th>
<th>Buy</th>
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<tbody>
<tr>
<td>Direct Materials</td>
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<td>Direct Labor</td>
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<tr>
<td>Variable Overhead</td>
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<td>Opportunity Cost</td>
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<td>Purchase Cost</td>
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<td></td>
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<td></td>
<td>$605,000</td>
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8. Suppose the price for the subcomponent has not been set. At what price per unit charged by the outside supplier would Meacham be economically indifferent between making the subcomponent or buying it from the outside?
   A) $30.25.
   B) $29.25.
   C) $26.50.
   D) $31.50.

   The answer is a.

   You would be indifferent if the Upgrade Option cost $605,000. This means that the sales price must be $605,000. Divide it by 20,000 units, and you get a sales price per unit of $30.25.
Use the following to answer questions 9-10:

The Melville Company produces a single product called a Pong. Melville has the capacity to produce 60,000 Pongs each year. If Melville produces at capacity, the per unit costs to produce and sell one Pong are as follows:

- Direct materials: $15
- Direct labor: $12
- Variable manufacturing overhead: $8
- Fixed manufacturing overhead: $9
- Variable selling expense: $8
- Fixed selling expense: $3

The regular selling price for one Pong is $80. A special order has been received by Melville from Mowen Company to purchase 6,000 Pongs next year. If this special order is accepted, the variable selling expense will be reduced by 75%. However, Melville will have to purchase a specialized machine to engrave the Mowen name on each Pong in the special order. This machine will cost $9,000 and it will have no use after the special order is filled. The total fixed manufacturing overhead and selling expenses would be unaffected by this special order.

9. Assume Melville anticipates selling only 50,000 units of Pong to regular customers next year. If Mowen Company offers to buy the special order units at $65 per unit, the effect of accepting the special order on Melville's operating income for next year should be a:

A) $60,000 increase.  
B) $90,000 decrease.  
C) $159,000 increase.  
D) $36,000 increase.

The answer is c.

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<th>Don't Take</th>
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<tr>
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<td>Variable Selling</td>
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<td>0 $2 x 6,000</td>
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<tr>
<td></td>
<td>$159,000</td>
<td>$0</td>
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10. Assume Melville anticipates selling only 50,000 units of Pong to regular customers next year. At what selling price for the 6,000 special order units would Melville be economically indifferent between accepting or rejecting the special order from Mowen?

A) $51.50.
B) $49.00.
C) $37.00.
D) $38.50.

The answer is d.

Melville would be indifferent if it had no profit from the sale. To do this you would reduce the sales price by $159,000. This would mean sales revenue of $231,000, which means a sales price of $38.50 ($231,000/6,000)
Answer Key – Quiz – Chapter 18

1. D
2. C
3. B
4. A
5. C
6. C
7. A
8. A
9. C
10. D