1. **Term explanation: (20%)**
   (1) Intellectual Capital
   (2) Decentralization
   (3) Tear-Down Analysis
   (4) Economics Value Added

2. **(20%)**
   Sunny Chen, financial analyst at Providence Corporation, is examining the behavior of quarterly maintenance costs for budgeting purposes. Sunny collects the following data on machine-hours worked and maintenance costs for the past eight months:

<table>
<thead>
<tr>
<th>Month</th>
<th>Machine-Hour</th>
<th>Maintenance Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>80</td>
<td>$500</td>
</tr>
<tr>
<td>February</td>
<td>130</td>
<td>880</td>
</tr>
<tr>
<td>March</td>
<td>160</td>
<td>960</td>
</tr>
<tr>
<td>April</td>
<td>164</td>
<td>980</td>
</tr>
<tr>
<td>May</td>
<td>210</td>
<td>1240</td>
</tr>
<tr>
<td>June</td>
<td>272</td>
<td>1580</td>
</tr>
<tr>
<td>July</td>
<td>328</td>
<td>1680</td>
</tr>
<tr>
<td>August</td>
<td>360</td>
<td>1900</td>
</tr>
</tbody>
</table>

   **Required:**

   (1) Using the high-low method to compute the cost function, relating maintenance costs.

   (2) Using the least squares method to compute the cost function, relating maintenance costs.

   (3) Sunny anticipates that Providence will operate machines for 100 hours in September. Calculate the predicted maintenance costs in September using cost function estimated in requirement 1 and 2.

   (4) Which method, high-low method or least squares method, should Sunny use to calculate the predicted maintenance costs? Explain briefly.

3. **(20%)**

   Given below are a number of graphs.

   If the horizontal axis represents the units produced over the year and the vertical axis represents total cost or revenue, indicate by number which graph best fits the situation or item described. Some graphs may be used more than once; some may not apply to any of the situations.

   1. Depreciation of plant, computed on a straight-line basis
   2. Incentive bonus plan the at pays managers $0.10 for every unit produced above some level of production
   3. Supervisors' salaries for one shift and two shifts
   4. Mixed costs – for example, car rental fixed charge plus variable rate for miles driven
   5. Data supporting the use of a variable-cost rate, such as manufacturing labor costs of $14 per unit produced
4. (20%)

Colorado Industries manufactures electronic testing equipment. Colorado also installs the equipment at customers' sites and ensures that it functions smoothly. Additional information on the Manufacturing and Installation departments is as follows (capacities are expressed in terms of the number of units of electronic testing equipment):

<table>
<thead>
<tr>
<th>Annual capacity</th>
<th>Equipment Manufactured</th>
<th>400 units per year</th>
<th>Equipment Installed</th>
<th>300 units per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment made and installed</td>
<td>300 units per year</td>
<td>300 units per year</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Colorado manufactures only 300 units per year because the Installation Department has only enough capacity to install 300 units. The equipment sells for $40,000 per unit (installed) and has direct materials costs of $15,000. All costs other than direct materials costs are fixed. The following requirements refer only to the preceding data. There is no connection between the requirements.

**Required**

1. Colorado's engineers have found a way to reduce equipment manufacturing time. The new method would cost an additional $50 per unit and would allow Colorado to manufacture 20 additional units a year. Should Colorado implement the new method? Show your calculations.

2. Colorado's designers have proposed a change in direct materials that would increase direct materials costs by $2,000 per unit. This change would enable Colorado to install 320 units of equipment each year. If Colorado makes the change, it will implement the new design on all equipment sold. Should Colorado use the new design? Show your calculations.

3. A new installation technique has been developed that will enable Colorado's engineers to install 10 additional units of equipment a year. The new method will increase installation costs by $50,000 each year. Should Colorado implement the new technique? Show your calculations.

4. Colorado is considering how to motivate workers to improve their productivity (output per hour). One proposal is to evaluate and compensate workers in the Manufacturing and Installation departments on the basis of their productivities. Do you think the new proposal is a good idea? Explain briefly.
5. (20%)  
Kenyon Stores, a large clothing retailer, developed an image of who its targeted customers were.

- Range: 20- to 40-year-old female (target: 29 years)
- College-educated
- Works full-time in professional executive position
- Innovatively fashionable
- Self-confident, great sense of humor

It then communicated this targeted customer image externally, through a variety of advertising and in-store promotional materials. By communicating a clear image to potential customers, the store enabled its existing and future customers to imagine themselves as fitting an image associated with purchase clothes at Kenyon Stores. The company creates for its customers an image of who they can be, in addition to selling them fashionable clothing of high quality at reasonable prices.

Kenyon Stores started the development of its customer objective by defining a customer strategy:

1. Kenyon must increase its customer share of wardrobe
2. Increased share of wardrobe will be achieved by customer loyalty: "We want the customer to visit us throughout the year and come to Kenyon for the complete range of her lifestyle needs."
3. To create this loyalty:
   - Our Merchandise must define our customer, her needs, and her aspirational image
   - Our Brand must satisfy the customer’s aspirational and lifestyle goals
   - Our Shopping Experience must promote customer loyalty
4. We must do a superb job of defining who our customers are and their buying behavior.

Kenyon identified three objectives as key product attributes for its consumers' value proposition: price, fashion, and quality. The price objective was stated as: "Provide fashion and quality that the customers perceive as high-value and consider to be fairly priced." The fashion objective was to: "Provide fashionable merchandise that satisfies our customer's aspirational and wardrobe needs within the Kenyon brand." The quality objective was to: "Ensure the highest quality and consistency of fit both within a style and across all product categories."

The shopping experience dimension was considered extremely important key attributes were availability of merchandise and the in-store shopping experience. The in-store shopping experience dimension was captured by an explicit vision of the six elements of the "perfect shopping experience":

1. Great looking stores with fashion impact
2. Customer welcomed by attractive associates, fashionably dressed, with a smile on their faces
3. Clear communication of special sales
4. Associates with good product knowledge
5. Personal name recognition by attending associate
6. A sincere thanks and an invitation to return soon

The goal was to deliver the six elements every time the customer enters a store. Kenyon had constructed a very specific definition of its "ideal shopper." The ideal shopper image communicated to all employees the fashion expectations of their customers. The brand image objective for Kenyon was stated as: "We will build Kenyon into a dominant national brand by clearly understanding our target customer and differentiating ourselves in meeting her needs."

Required
Select appropriate measures for Kenyon's customer and internal business process perspectives.