**Activity-Based Costing; Budgeted Operating Margin**

Stanley Cycle Company produces two subassemblies, JY-63 and RX-67, used in manufacturing motorcycles. The company is currently using an absorption costing system that applies overhead based on direct-labour hours. The budget for the current year ending December 31, 20x4 is as follows:

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| **STANLEY CYCLE COMPANY** | | | |
| **Budgeted Statement of Gross Margin for 20x4** | | | |
|  | **JY-63** | **RX-67** | **Total** |
| Sales in units. | 5,000 | 5,000 | 10,000 |
| Sales revenue | $ 3,400,000 | $ 4,400,000 | $ 7,800,000 |
| Cost of goods manufactured and sold: | | | |
| Beginning finished-goods inventory. | $ 480,000 | $ 600,000 | $ 1,080,000 |
| Add: Direct material. | 2,000,000 | 3,500,000 | 5,500,000 |
| Direct labour | 370,370 | 185,186 | 555,556 |
| Applied manufacturing overhead\* | 1,088,050 | 544,026 | 1,632,076 |
| Cost of goods available for sale. | 3,938,420 | 4,829,212 | 8,767,632 |
| Less: Ending finished-goods inventory. | 480,000 | 600,000 | 1,080,000 |
| Cost of goods sold. | 3,458,420 | 4,229,212 | 7,687,632 |
| Gross margin. | $(58,420) | $170,788 | $112,368 |

\* Applied on the basis of direct-labour hours:

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| Machining | $ 849,056 |
| Assembly | 433,962 |
| Material handling | 113,208 |
| Inspection | 235,850 |
| Total | $1,632,076 |

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Jay Rexford, Stanley Cycle's president, has been reading about a new type of costing method called activity-based costing. Rexford is convinced that activity-based costing will cast a new light on future profits. As a result, Jack Canfield, the company's director of cost management, has accumulated cost pool information for this year shown on the following chart. This information is based on a product mix of 5,000 units of JY-63 and 5,000 units of RX-67.

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| **Cost Pool Information for 20x4** | | | |
| **Cost Pool** | **Activity** | **JY-63** | **RX-67** |
| Direct labour | Direct-labour hours (per product line) | 10,000 | 5,000 |
| Material handling | Number of parts (per unit) | 5 | 10 |
| Inspection | inspection hours (per product line) | 5,000 | 7,500 |
| Machining | Machine hours (per product line) | 15,000 | 30,000 |
| Assembly | Assembly hours (per product line) | 6,000 | 5,500 |

In addition, the following information is projected for the next calendar year, 20x5:

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|  | **JY-63** | **RX-67** |
| Sales (in units) | 5,100 | 4,900 |
| Beginning inventory, finished goods (in units) | 800 | 600 |
| Ending inventory, finished goods (in units) | 700 | 700 |

On January 1, 20x5, Rexford is planning to increase the prices of JY-63 to $710 and RX-67 to $910. Material costs are not expected to increase in 20x5, but direct labour will increase by 8 percent, and all manufacturing overhead costs will increase by 6 percent. Due to the nature of the manufacturing process, the company does not have any beginning or ending work-in-process inventories.

Stanley Cycle Company has materials delivered to the production facility directly from the vendors. The raw-material inventory both at the beginning and the end of the month is immaterial and can be ignored for the purposes of a budgeted income statement. The company uses the first-in, first-out (FIFO) inventory method.

**Required:**

1. Explain how activity-based costing differs from traditional product-costing methods.
2. Using activity-based costing, calculate the total cost for 20x5 for the following activity cost pools: material handling, inspection, machining, and assembly. (For the total costs, round to the nearest dollar.) Then, calculate the pool rate per unit of the appropriate cost driver for each of the four activities.
3. Prepare a table showing for each product line the estimated 20x5 cost for each of the following cost elements: direct material, direct-labour, machining, assembly, material handling, and inspection. (Round to the nearest dollar.)
4. Prepare a budgeted statement showing the gross margin for Stanley Cycle Company for 20x5, using activity-based costing. The statement should show each product and a total for the company. Be sure to include detailed calculations for the cost of goods manufactured and sold. (Round each amount in the statement to the nearest dollar.)