Student name:\_\_\_\_\_\_\_\_\_\_

**ESSAY. Write your answer in the space provided or on a separate sheet of paper.  
1)** Werger Manufacturing Corporation has a traditional costing system in which it applies manufacturing overhead to its products using a predetermined overhead rate based on direct labor-hours (DLHs). The company has two products, W82R and L48S, about which it has provided the following data:

|  |  |  |
| --- | --- | --- |
|  | **W82R** | **L48S** |
| **Direct materials per unit** | $ 21.90 | $ 57.40 |
| **Direct labor per unit** | $ 18.80 | $ 64.60 |
| **Direct labor-hours per unit** | 0.70 | 2.40 |
| **Annual production (units)** | 36,200 | 24,900 |

The company's estimated total manufacturing overhead for the year is $2,663,222 and the company's estimated total direct labor-hours for the year is 85,100. The company is considering using a variation of activity-based costing to determine its unit product costs for external reports. Data for this proposed activity-based costing system appear below:

|  |  |
| --- | --- |
| **Activities and Activity Measures** | **Estimated Overhead Cost** |
| Supporting direct labor (direct labor-hours) | $ 595,700 |
| Setting up machines (setups) | 865,062 |
| Parts administration (part types) | 1,202,460 |
| Total | $ 2,663,222 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Activities** | **W82R** | **L48S** | **Total** |
| Supporting direct labor | 25,340 | 59,760 | 85,100 |
| Setting up machines | 839 | 3,530 | 4,369 |
| Parts administration | 1,750 | 1,190 | 2,940 |

**Required:**  
 a. Determine the unit product cost of each of the company's two products under the traditional costing system.  
 b. Determine the unit product cost of each of the company's two products under activity-based costing system.  
 **(For all requirements, round your intermediate calculations and final answers to 2 decimal places.)**

**Answer Key**Test name: ch 2A

1) a. Traditional Unit Product Costs  
 Predetermined overhead rate = Estimated total manufacturing overhead cost ÷ Estimated total amount of the allocation base = $2,663,222 ÷ 85,100 direct labor-hours = $31.30 per direct labor-hour

|  |  |  |
| --- | --- | --- |
|  | **W82R** | **L48S** |
| **Direct materials** | $ 21.90 | $ 57.40 |
| **Direct labor** | 18.80 | 64.60 |
| **Manufacturing overhead**  **(0.70 direct labor-hours × $31.30 per direct labor-hour; 2.40 direct labor-hours × $31.30 per direct labor-hour)** | 21.91 | 75.12 |
| **Unit product cost** | $ 62.61 | $ 197.12 |

b. ABC Unit Product Costs.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Estimated Overhead Cost** | **Total Expected Activity** | **Activity Rate** |
| **Supporting direct labor** | $ 595,700 | 85,100 direct labor-hours | $ 7 per direct labor-hour |
| **Setting up machines** | $ 865,062 | 4,369 setups | $ 198 per setup |
| **Parts administration** | $ 1,202,460 | 2,940 part types | $ 409 per part type |

Overhead cost for W82R

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Activity Rate** | **Activity** | **ABC Cost** |
| **Supporting direct labor** | $ 7 per direct labor-hour | 25,340 direct labor-hours | $ 177,380 |
| **Setting up machines** | $ 198 per setup | 839 setups | 166,122 |
| **Parts administration** | $ 409 per part type | 1,750 part types | 715,750 |
| **Total** |  |  | $ 1,059,252 |

Overhead cost for L48S

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Activity Rate** | **Activity** | **ABC Cost** |
| **Supporting direct labor** | $ 7 per direct labor-hour | 59,760 direct labor-hours | $ 418,320 |
| **Setting up machines** | $ 198 per setup | 3,530 setups | 698,940 |
| **Parts administration** | $ 409 per part type | 1,190 part types | 486,710 |
| **Total** |  |  | $ 1,603,970 |

|  |  |  |
| --- | --- | --- |
|  | **W82R** | **L48S** |
| **Direct materials** | $ 21.90 | $ 57.40 |
| **Direct labor** | 18.80 | 64.60 |
| **Manufacturing overhead**  **(1,059,252 ÷ 36,200 units; $1,603,970 ÷ 24,900 units)** | 29.26 | 64.42 |
| **Unit product cost** | $ 69.96 | $ 186.42 |