|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
| FireOut, Inc. manufactures steel cylinders and nozzles for two models of fire extinguishers: (1) a home fire extinguisher and (2) a commercial fire extinguisher. The *home model* is a high-volume (54,000 units), half-gallon cylinder that holds 2 1/2 pounds of multipurpose dry chemical at 480 PSI. The *commercial model* is a low-volume (10,200 units), two-gallon cylinder that holds 10 pounds of multi-purpose dry chemical at 390 PSI. Both produts require 1.5 hours of direct labor for completion. Therefore, total annual direct labor hours are 96,300 or [1.5 hrs. × (54,000 + 10,200)]. Expected annual manufacturing overhead is $1,502,280. Thus, the predetermined overhead rate is $15.60 or ($1,502,208 ÷ 96,300) per direct labor hour. The direct materials cost per unit is $18.50 for the home model and $26.50 for the commercial model. The direct labor cost is $19 per unit for both the home and the commercial models.The company's managers identified six activity cost pools and related cost drivers and accumulated overhead by cost pool as follows.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
|

|  |
| --- |
|  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

| **Activity Cost Pools** | **Cost Drivers** | **Estimated Overhead** | **Expected Use of Cost Drivers** | **Expected Use of Drivers by Product** |
| --- | --- | --- | --- | --- |
| **Home** | **Commercial** |
| Receiving | Pounds | $   70,350 | 335,000 | 215,000 | 120,000 |
| Forming | Machine hours | 150,500 |  35,000 |  27,000 |   8,000 |
| Assembling | Number of parts | 390,600 | 217,000 | 165,000 |  52,000 |
| Testing | Number of tests | 51,000 |  25,000 |  15,000 |  10,000 |
| Painting | Gallons | 52,580 |   5,258 |   3,680 |   1,578 |
| Packing and shipping | Pounds | 787,250 | 335,000 | 215,000 | 120,000 |
|   |   | $1,502,280 |   |   |   |

 |

 |
|  |

 |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

 | http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

**Hint:** *Assign overhead using traditional costing and ABC; compute unit costs; classify activities as value- or non–value-added.* |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Instructions**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(a)** | Under traditional product costing, compute the total unit cost of each product. Prepare a simple comparative schedule of the individual costs by product (similar to Illustration [4-4](http://edugen.wiley.com/edugen/courses/crs1865/weygandt7262/weygandt7262c04/weygandt7262/weygandt7262c04/weygandt7262c04xlinks.xform?id=weygandt7262c04-fig-0004)).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
|

|  |
| --- |
|  |

 |

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

 |

 |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
| **(b)** | Under ABC, prepare a schedule showing the computations of the activity-based overhead rates (per cost driver). |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
| **(c)** | Prepare a schedule assigning each activity's overhead cost pool to each product based on the use of cost drivers. (Include a computation of overhead cost per unit, rounding to the nearest cent.)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
|

|  |
| --- |
|  |

 |

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

 |

 |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
| **(d)** | Compute the total cost per unit for each product under ABC.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
|

|  |
| --- |
|  |

 |

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |

 |

 |
| http://edugen.wiley.com/edugen/courses/crs1865/common/art/pixel.gif |
| **(e)** | Classify each of the activities as a value-added activity or a non–value-added activity. |

 |

 |