**Question 7: (10 points)**

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| **Exercise 5-5 (Appendix 5A) Least-Squares Regression [LO5]** |
| EZ Rental Car offers rental cars in an off-airport location near a major tourist destination in Florida. Management would like to better understand the behavior of the company's costs. One of those costs is the cost of washing cars. The company operates its own car wash facility in which each rental car that is returned is thoroughly cleaned before being released for rental to another customer. Management believes that the costs of operating the car wash should be related to the number of rental returns. Accordingly, the following data have been compiled: |
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| --- | --- | --- |
| Month | Rental Returns | Car Wash Costs |
| January |   | 2,515 |   |   | $ | 11,225 |   |
| February |   | 2,618 |   |   | $ | 14,522 |   |
| March |   | 2,646 |   |   | $ | 10,911 |   |
| April |   | 2,880 |   |   | $ | 13,000 |   |
| May |   | 3,533 |   |   | $ | 15,300 |   |
| June |   | 4,850 |   |   | $ | 21,400 |   |
| July |   | 5,400 |   |   | $ | 21,200 |   |
| August |   | 5,200 |   |   | $ | 19,000 |   |
| September |   | 4,600 |   |   | $ | 21,800 |   |
| October |   | 3,700 |   |   | $ | 18,000 |   |
| November |   | 2,100 |   |   | $ | 9,800 |   |
| December |   | 2,400 |   |   | $ | 11,000 |   |

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| **Required:** |
| Using least-squares regression, estimate the fixed cost and variable cost elements of monthly car wash costs. **(Round fixed cost to the nearest dollar amount and the variable cost element to 2 decimal places. Omit the "$" sign in your response.)** |
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| Fixed cost | $ |   |
| Variable cost | $ |   |

Hint 1 |

**Question 8: (10 points)**

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| **Exercise 5-3 High-Low Method [LO3]** |
| The Edelweiss Hotel in Vail, Colorado, has accumulated records of the total electrical costs of the hotel and the number of occupancy-days over the last year. An occupancy-day represents a room rented out for one day. The hotel's business is highly seasonal, with peaks occurring during the ski season and in the summer. |
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| --- | --- | --- |
| Month | Occupancy-Days | ElectricalCosts |
| January |   | 2,619 |   |   | $ | 6,267 |   |
| February |   | 2,873 |   |   | $ | 6,542 |   |
| March |   | 3,523 |   |   | $ | 7,108 |   |
| April |   | 1,442 |   |   | $ | 4,020 |   |
| May |   | 550 |   |   | $ | 2,277 |   |
| June |   | 1,146 |   |   | $ | 3,581 |   |
| July |   | 3,155 |   |   | $ | 7,264 |   |
| August |   | 3,719 |   |   | $ | 8,079 |   |
| September |   | 1,279 |   |   | $ | 3,707 |   |
| October |   | 319 |   |   | $ | 1,721 |   |
| November |   | 1,068 |   |   | $ | 3,319 |   |
| December |   | 2,047 |   |   | $ | 5,185 |   |

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| **Requirement 1:** |
| Using the high-low method, estimate the variable cost of electricity per occupancy-day and the fixed cost of electricity per month. **(Round the fixed cost to the nearest whole dollar and the variable cost to the nearest whole cent. Omit the "$" sign in your response.)** |
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| --- | --- | --- | --- |
|   |   |   |   |
| Variable cost | $ |  | per occupancy day |
| Fixed cost | $ |  | per month |

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**Question 10: (10 points)**

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| **Exercise 5-1 Fixed and Variable Cost Behavior [LO1]** |
| Koffee Express operates a number of espresso coffee stands in busy suburban malls. The fixed weekly expense of a coffee stand is $2,500 and the variable cost per cup of coffee served is $0.82. |
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| **Requirement 1:** |
| Fill in the following table with your estimates of total costs and cost per cup of coffee at the indicated levels of activity for a coffee stand. **(Round cost of a cup of coffee to 3 decimal places. Omit the "$" sign in your response.)** |
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|  |  |
| --- | --- |
|   | Cups of Coffee Served in a Week |
|   | 1,100 | 1,200 | 1,300 |
| Fixed cost |   | $ |  |   |   | $ |  |   |   | $ |  |   |
| Variable cost |   |   |  |   |   |   |  |   |   |   |  |   |
| Total cost |   | $ |  |   |   | $ |  |   |   | $ |  |   |
| Cost per cup of coffee served |   | $ |  |   |   | $ |  |   |   | $ |  |   |

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