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| 1)Two thousand six hundred frequent business travelers are asked which midwestern city they prefer: Indianapolis, Saint Louis, Chicago, or Milwaukee. 113 liked Indianapolis best, 455 liked Saint Louis, 1395 liked Chicago, and the remainder preferred Milwaukee. Develop a frequency table and a relative frequency table to summarize this information. **(Round relative frequency to 3 decimal places.)** |

|  |  |  |
| --- | --- | --- |
|   City | Frequency | Relative Frequency |
|   Indianapolis |    |        |
|   St. Louis |    |        |
|   Chicago |    |        |
|   Milwaukee |    |     |

2)

|  |
| --- |
| A small business consultant is investigating the performance of several companies. The fourth-quarter sales for last year (in thousands of dollars) for the selected companies were: |

|  |  |
| --- | --- |
|   Company | Fourth-Quarter Sales($ thousands) |
|   Hoden Building Products | $ 1,645.2             |
|   J & R Printing Inc. | 4,757.0             |
|   Long Bay Concrete Construction | 8,913.0             |
|   Mancell Electric and Plumbing | 627.1             |
|   Maxwell Heating and Air Conditioning | 24,612.0             |
|   Mizelle Roofing & Sheet Metals | 191.9             |
|  |

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| The consultant wants to include a chart in his report comparing the sales of the six companies. |

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| Identify a bar chart that compares the fourth-quarter sales of these corporations. |







3)

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| The Quick Change Oil Company has a number of outlets in the metropolitan Seattle area. The daily number of oil changes at the Oak Street outlet in the past 20 days are: |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 65 | 98 | 55 | 62 | 79 | 59 | 51 | 90 | 72 | 56 |
| 70 | 62 | 66 | 80 | 94 | 79 | 63 | 73 | 71 | 85 |

|  |
| --- |
| The data are to be organized into a frequency distribution. |

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|  |

|  |  |
| --- | --- |
| **a.** | How many classes would you recommend? |

|  |  |
| --- | --- |
|   Number of classes |    |

|  |  |
| --- | --- |
| **d.** | Organize the number of oil changes into a frequency distribution. **(Round relative frequency answers to 2 decimal places.)** |

|  |  |  |
| --- | --- | --- |
|   | *f* | Relative frequency |
|              50 up to            60 |  |    |
|    up to  |  |    |
|    up to  |  |    |
|    up to  |  |    |
|    up to  |  |    |
|   |  |  |
|   Total |  |    |
|   |  |  |
|  |

4)

|  |
| --- |
| The food services division of Cedar River Amusement Park Inc. is studying the amount that families who visit the amusement park spend per day on food and drink. A sample of 40 families who visited the park yesterday revealed they spent the following amounts: |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $77 | $18 | $63 | $84 | $38 | $54 | $50 | $59 | $54 | $56 | $36 | $26 | $50 | $34 | $44   |
| 41 | 58 | 58 | 53 | 51 | 62 | 43 | 52 | 53 | 63 | 62 | 62 | 65 | 61 | 52   |
| 60 | 60 | 45 | 66 | 83 | 71 | 63 | 58 | 61 | 71 |    |    |    |    |    |

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| --- |
|  |

|  |  |
| --- | --- |
| **a.** | Organize the data into a frequency distribution, using seven classes and 15 as the lower limit of the first class. What class interval did you select? **(Round your answer to the nearest whole number.)** |

|  |  |
| --- | --- |
|   Class interval |   |

|  |  |
| --- | --- |
| **b.** | Where do the data tend to cluster?**(Select all that apply.)** |
|   |   |
|   |

|  |  |
| --- | --- |
|  | $35 up to $45 |
|  | $45 up to $55 |
|  | $35 up to $45 |
|  | $55 up to $65 |
|  | $75 up to $85 |

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5)

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| --- |
| Ecommerce.com, a large Internet retailer, is studying the lead time (elapsed time between when an order is placed and when it is filled) for a sample of recent orders. The lead times are reported in days. |

|  |  |
| --- | --- |
|   Lead Time (days) | Frequency |
|   0 up to 5 | 6          |
|   5 up to 10 | 7          |
|   10 up to 15 | 12          |
|   15 up to 20 | 8          |
|   20 up to 25 | 7          |
|   |  |
|      Total | 40          |
|   |  |
|  |

|  |  |
| --- | --- |
| **a.** | How many orders were studied? |

|  |  |
| --- | --- |
|   Number of orders |   |

|  |  |
| --- | --- |
| **b.** | What is the midpoint of the first class? **(Round your answer to 1 decimal place.)** |

|  |  |
| --- | --- |
|   Midpoint |    |

|  |  |
| --- | --- |
| **c.** | What are the coordinates of the first class for a frequency polygon assuming we draw a frequency polygon using the midpoints? **(Round your answer to 1 decimal place.)** |
|   |   |
|   | x =  , y =  |

6)

|  |
| --- |
| The following cumulative frequency polygon shows the selling price ($000) of houses sold in the Billings, Montana, area. |



|  |  |
| --- | --- |
| **a.** | How many homes were studied? |

|  |  |
| --- | --- |
|   Number of homes |   |

|  |  |
| --- | --- |
| **b.** | What is the class interval? |

|  |  |
| --- | --- |
|   Class interval |   |

|  |  |
| --- | --- |
| **c.** | One hundred homes sold for less than what amount? |

|  |  |  |
| --- | --- | --- |
|   Sold price | $  | approximately. |

|  |  |
| --- | --- |
| **d.** | About 75% of the homes sold for less than what amount? |

|  |  |  |
| --- | --- | --- |
|   Sold price | $  | approximately. |

|  |  |
| --- | --- |
| **e.** | Estimate the number of homes in the $150,000 up to $200,000 class. |

|  |  |
| --- | --- |
|   Amount |   |

|  |  |
| --- | --- |
| **f.** | About how many homes sold for less than $225,000? |

|  |  |
| --- | --- |
|   Amount |   |