**Math 30-3 Statistics Review**

**Statistics C1 – Mean, Median, Mode**

1. Nine coyotes were caught last season by wildlife officers. Their weights in kilograms were 22, 25, 31, 27, 26, 28, 28, 32, 25.
   1. Arrange the data in a stem-and-leaf plot.
   2. What is the mean, median and mode for the coyotes’ weights?
   3. Suppose a tenth coyote weighing 30 kg was caught at the end of the season. What is the new median?
2. A swimming coach orders team suits. These sizes are needed:   
   6, 14, 12, 10, 8, 4, 8, 10, 8, 6, 12, 8, 8, 10, 8, 12, 6, 10.
   1. Create a frequency table to show the data.
   2. What is the mode for the data set?
   3. Is the mode the best way to represent the typical suit size worn by a swimmer? Explain.
3. A school is having a recycling fundraiser. The table shows   
   how many used containers each grade collected.

|  |  |  |
| --- | --- | --- |
| Grade | Number of Students | Total Collected |
| 7 | 30 | 300 |
| 8 | 25 | 295 |
| 9 | 32 | 280 |
| 10 | 28 | 310 |
| 11 | 27 | 325 |
| 12 | 27 | 290 |

* 1. Which grade collected the most used containers?
  2. What is the mean number of containers collected for each student in each grade? Round to the nearest whole number.
  3. Which grade should win the prize for the most used containers collected? Explain your choice.

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**Statistics C2 – Weighted Mean**

1. Calculate the missing values to find the weighted mean.

|  |  |  |
| --- | --- | --- |
| Value, *x* | Weighting, *w* (%) | Product of Value and Weighting, *wx* |
| 63 | 40 |  |
| 60 | 35 |  |
| 52 | 15 |  |
| 84 | 10 |  |
| **Totals** |  |  |

1. Gerard’s and Mary’s final marks are shown in the table.

|  |  |  |
| --- | --- | --- |
| Class | Gerard’s Mark (%) | Mary’s Mark (%) |
| English | 80 | 70 |
| Math | 75 | 80 |
| Chemistry | 85 | 75 |
| History | 90 | 85 |
| Phys. Ed. | 85 | 95 |

* 1. Calculate each student’s average.
  2. Use the following weighting to recalculate each student’s average.

|  |  |
| --- | --- |
| Class | Weighting |
| English | 3 |
| Math | 3 |
| Chemistry | 2 |
| History | 2 |
| Phys. Ed. | 1 |

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**Statistics C3 – Trimmed Mean**

1. Determine the range, identify any outliers and calculate the trimmed mean for each data set.
   1. 21, 18, 25, 9, 22, 19, 31, 20, 19, 21
   2. 8, 5, 18, 10, 9, 8, 11, 7, 10, 8
2. The weights of ten lobsters caught were recorded in pounds:  
   1.5, 2.0, 1.4, 4.1, 1.5, 1.6, 2.1, 1.4, 1.1, 1.2.
   1. What is the range of the data set?
   2. What are the three measures of central tendency for the data set?
   3. Identify any outliers. Should the outliers be removed when advertising the average weight of lobsters this season? Explain.
   4. Remove the highest and lowest values and recalculate the range, median, and mean.
   5. How did removing the highest and lowest values affect the range, median, and mean?

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**Statistics C4 – Percentiles**

1. Tracy placed in the 80th percentile in triple jump. Explain what this percentile means.
2. Out of a class of 30 students, Rhonda had the 5th highest mark in the class. What percentile is Rhonda in?
3. Bob is in the 65th percentile for height in his school. Bob’s school has a population of 500.
   1. How many people are shorter than Bob?
   2. How many people are taller than Bob?
4. The following table shows the hourly wages for a random sample of students.

|  |  |
| --- | --- |
| Hourly Wage | Number of Students |
| $10.00 | 8 |
| $11.00 | 10 |
| $12.00 | 12 |
| $13.00 | 9 |
| $14.00 | 6 |

Veronica makes $11.50 an hour. What percentile would she be in?