| What you need to know & be able to do | Things to remember | Problem | Problem |
|---|---|---|---|
| Identify the measures of central tendency. | • Mean<br>• Median<br>• Mode | **1.** 36, 39, 58, 42, 106, 39, 48, 45 | **2.** 50, 55, 60, 58, 62, 57, 68, 51, 63 |
| Identify the measures of spread. | • Q1<br>• Q3<br>• IQR<br>• Minimum<br>• Maximum<br>• Range<br>• MAD | **3.** (Use the same #s from 1) | **4.** (Use the same #s from 2) |
| Construct a box-and-whisker plot. | • First dot: Min<br>• First Line: Q1<br>• Middle Line: Median<br>• Third Line: Q3<br>• Last dot: Max<br><br>• Outlier:<br>Q1 – 1.5(IQR)<br>Q3 + 1.5(IQR) | **5.** Using the data from #1 and 2, give the 5-number summaries. Remember to label the type of statistic.<br><br><table><tr><td>Statistic</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Data 1</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Data 2</td><td></td><td></td><td></td><td></td><td></td></tr></table><br>**6.** Construct 2 box and whisker plots. Remember to label your scale.<br><br>╋━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━┿━╋<br><br>**7.** Are there any outliers? Show your work!<br><br>    **8.** Which data set had the higher median?<br><br>    **9.** Which data set has the greater IQR?<br><br>    **10.** Which data set had the lower maximum?<br><br>    **11.** In what span of numbers did the top 50% of data fall in data set 1?<br><br>    **12.** How would you describe the shape of data set 2? | |

| Determine if the situation has a positive, negative, or no correlation and if there is causation. | • Positive: Both items are increasing/decreasing<br>• Negative: one item increases as the other decreases<br>• No Correlation: No relationship<br>• Causation: One item causes the other. | **13.** Practicing Free Throws vs. Free Throw Percentage | **14.** Colors of the Sky vs. Time of Day |
| | | **15.** Weight vs. Amount of Exercise | **16.** Number of Followers on Twitter vs. Number of Friends on Facebook |

| Construct a probability table. | • Joint Probability: Individual Cell/Table Total<br>• Marginal Probability: Row or Column Total/ Table Total<br>• Conditional Probability: Individual Cell/Row or Column Total | Complete the table to answer the following questions. |

|         | Football | Basketball | Soccer | |
|---------|----------|------------|--------|---|
| Males   | 48       | 35         | 17     | |
| Females | 22       | 38         | 40     | |
|         |          |            |        | |

**17.** What percent of females like soccer? Is this conditional, marginal, or joint frequency?

**18.** What percent of respondents likes basketball? Is this conditional, marginal, or joint frequency?

**19.** Given that a person likes football, what is the probability they are male? Is this conditional, marginal, or joint frequency?

| Find the line of best fit. | • $y = ax + b$<br>• r = correlation coefficient (if close to 0 bad fit; if close to 1 or -1 good fit.) | |

| # of Sandwiches | 68 | 55 | 85 | 22 | 64 | 28 |
|-----------------|------|------|------|------|------|------|
| Price | 4.00 | 5.50 | 3.50 | 8.00 | 5.50 | 7.00 |

**20.** Determine the line of best fit. y = _____; r = _____
Is this model a good fit for the data?

A.  What would you expect the price per sandwich to be if you bought 10 sandwiches? Interpolation or extrapolation?

B.  What would you expect the price per sandwich to be if you bought 50 sandwiches? Interpolation or extrapolation?

C.  How many sandwiches would you need to buy for them to be 2.00 each?