**Lab 3 Quiz Answers**

For Tutorials 1 through x, enter the answers for the questions posed on the ‘Exercise’ tab in each tutorial.

**Tutorial 1:**

|  |  |
| --- | --- |
| Mean Beak Depth (mm) = |  0.71344 |

**Tutorial 2:**

|  |  |
| --- | --- |
| Mean | 9.11 |
| Variance using function | 0.774621429 |
| Standard Deviation using function | 0.880125803 |
|  |  |
| Sum of Squares | 37.956450 |
| n-1 | 49 |
| Variance (sum of squares / (n-1) | 0.774621429 |
| Standard Deviation | 0.880125803 |

**Tutorial 3:**

|  |  |  |
| --- | --- | --- |
|  | 1977 | 1978 |
| Mean | 9.11 | 9.67 |
| Standard Error of the Mean | 1.288489977 | 1.368081916 |

**Tutorial x:**

a)

|  |  |
| --- | --- |
| What is the independent variable? | Vegetation |
| What type of data are represented by the independent variable? | Categorical |
| What is the dependent variable? | Soil pH |
| What type of data are represented by the dependent variable? | Numerical/ Continuous |
| What kind of graph is best for summarizing these data? |  Bar Graph |

b)

|  |  |
| --- | --- |
| What is the independent variable? | Root mass, g |
| What type of data are represented by the independent variable? | Numerical/ Continuous |
| What is the dependent variable? | Fruit mass, g |
| What type of data are represented by the dependent variable? | Numerical/ Continuous |
| What kind of graph is best for summarizing these data? |  Scatterplot |

c)

|  |  |
| --- | --- |
| What is the independent variable? | Age, years |
| What type of data are represented by the independent variable? | Numerical/ Continuous |
| What is the dependent variable? | Bone mass, g |
| What type of data are represented by the dependent variable? | Numerical/ Continuous |
| What kind of graph is best for summarizing these data? |  Scatterplot |

d)

|  |  |
| --- | --- |
| What is the independent variable? | Region (or Population) |
| What type of data are represented by the independent variable? | Numerical/ Discrete (or Categorical) |
| What is the dependent variable? | Number of Murders |
| What type of data are represented by the dependent variable? | Numerical/ Continuous |
| What kind of graph is best for summarizing these data? |  Scatterplot (or Bar Graph) |

e)

|  |  |
| --- | --- |
| What is the independent variable? | Irrigation (or Fertilizer) |
| What type of data are represented by the independent variable? | Categorical (both) |
| What is the dependent variable? | Yield, kg |
| What type of data are represented by the dependent variable? | Numerical/ Continuous |
| What kind of graph is best for summarizing these data? |   Bar Graph (both) |

f)

|  |  |
| --- | --- |
| What is the independent variable? | Stem length, cm |
| What type of data are represented by the independent variable? | Numerical/ Continuous |
| What is the dependent variable? | Leaf length, cm |
| What type of data are represented by the dependent variable? | Numerical/ Continuous |
| What kind of graph is best for summarizing these data? |  Scatterplot |

g)

|  |  |
| --- | --- |
| What is the independent variable? | Month |
| What type of data are represented by the independent variable? | Categorical |
| What is the dependent variable? | Ave. Rainfall, In |
| What type of data are represented by the dependent variable? | Numerical/ Continuous |
| What kind of graph is best for summarizing these data? |  Bar Graph (or Line Graph) |

Quiz 3 Summary Question:

1. What data describe the explanatory variable (x-axis)? (1 pt)

 Age, years

2. What data describe the response variable (y-axis)? (1 pt)

 Body mass

3. What kind of data are the explanatory variable (e.g., categorical, etc.)? (1 pt)

 Numerical

4. What kind of data are the response variable (e.g., categorical, etc.)? (1 pt)

 Numerical

5. Based on your answers, what is the most appropriate way to graph these data? (1 pt)

 Scatterplot

6. Copy the graph from excel to this document. (2 pt)

7. Do you see a trend? (1 pt)

 Negative trend – decreasing body mass with increasing age

8. Describe what you think the data show. What is the question being asked? Think about the biological factors that might be driving the question. (1 pt)

 Does increasing age result in a decrease in body mass?