# **Moussa Academy**

# **Assignment 1 – Stat101 – 2017**

## **True or False**

1. **True**
2. **False**
3. **False**
4. **True**
5. **True**
6. **False**

## **Multiple Choices Questions**

1. **A**
2. **C**
3. **C**
4. **C**
5. **C**
6. **D**

## **Essay Type Questions**

1. **Frequency distribution:**

|  |  |
| --- | --- |
| **Blood Group** | **Frequency** |
| **O** | **21** |
| **A** | **17** |
| **B** | **8** |
| **AB** | **4** |
| **Total** | **50** |

**Bar Graph:**

1. **a. Class width = 100 – 0 = 100**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cotinine Level (in ng/ ml) | Frequency | Relative Frequency | Cumulative Frequency | Cumulative Relative Frequency |
| 0 – 99 | 11 | 0.275 | 11 | 0.275 |
| 100 – 199 | 12 | 0.3 | 23 | 0.575 |
| 200 – 299 | 14 | 0.35 | 37 | 0.925 |
| 300 – 399 | 1 | 0.025 | 38 | 0.95 |
| 400 – 499 | 2 | 0.05 | 40 | 1 |
| Total | 40 | 1 |  |  |

1. **mean: x̄ = = 6.8**

**mode = 7**

**median:**

**6.3 6.6 6.7 7 7 7.2**

**Median = = 6.85**

1. **B: x̄B = 2.8 sB = 0.28**

**A: x̄A = 6.8**

**SA = = = 0.329**

**Coefficient of variation for B: CVB = \* 100% = \* 100% = 10%**

**Coefficient of variation for A: CVA = \* 100% = \* 100% = 4.84%**

**We have more variation in B than A**

1. **Food allergy → A**

**Seasonal allergy → B**

**P(A) = 0.45**

**P(B) = 0.3**

**P(A and B) = 0.18**

**probability of those who have food allergies given that they have seasonal allergies → P(A | B)**

**p(A | B) = = = 0.6 = 60%**

1. **probability of a randomly selected child is a food or a seasonal allergic = P(A or B)**

**P(A or B) = P(A) + P(B) – P(A and B) = 0.45 + 0.3 – 0.18 = 0.57 = 57%**

**probability that a randomly selected child has no allergy = complement of P(A or B) = 1 – P(A or B) = 1 – 0.57 = 0.43 = 43%**