**DESCRIPTIVE STATISTICS**

**Exercises**

**EXERCISE 1**

The following table shows the glycemia (mg/dL) of 500 older adults grouped in 5 classes having the same width:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CLASS INTERVAL** | **MIDDLE POINT** | **FREQUENCY** |  | |  | **CUMULATIVE FREQUENCY** |  | |
|  |  | f | | p% |  | F | | P% |
| 65-|75 | **70** | 75 | | 15 |  | 75 | | 15 |
| 75-|85 | **80** | 100 | | 20 |  | 175 | | 35 |
| 85-|95 | **90** | 150 | | 30 |  | 225 | | 65 |
| 95-|105 | **100** | 125 | | 25 |  | 450 | | 90 |
| 105-|115 | **110** | 50 | | 10 |  | 500 | | 100 |

1. Calculate mean and variance
2. Identify the modal class
3. Represent the data in a Galton Ogive and identify the glycemic value exceeded by only 5% of these older adults
4. Find the class containing the 50th percentile

**EXERCISE 2**

The following table shows the absolute frequencies of the hemoglobin blood concentration (g/dL) categorized into 5 classes for 300 patients:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Blood concentration of Hb** (g/dL) | | | | |  |
|  | 12  (11.5, 12.5] | 13  (12.5, 13.5] | 14  (13.5, 14.5] | 15  (14.5, 15.5] | 16  (15.5, 16.5] | **Total** |
| Females | 18 | 65 | 14 | 2 | 1 | **100** |
| Males | 2 | 40 | 71 | 58 | 29 | **200** |
| **Total** | **20** | **105** | **85** | **60** | **30** | **300** |

1. What is the proportion of patients with Hb> 14.5 g/dL?
2. What is the proportion of females with Hb> 14.5 g/dL?
3. What is the proportion of males with Hb> 14.5 g/dL?
4. What is the proportion of females among patients with Hb< 12.5 g/dL?

**EXERCISE 3**

Five men with obesity have been visited in the same day. The following table shows their weights (kg):

|  |  |
| --- | --- |
| **Patient ID** | **Weight** (kg) |
| 1 | 120 |
| 2 | 147 |
| 3 | 132 |
| 4 | 128 |
| 5 | 138 |

1. Calculate mean and standard deviation

The scale was later discovered to have been calibrated badly and that all measurements were wrong overestimated by 5 kg.

1. Calculate mean and standard deviation
2. Calculate mean and standard deviation in hg
3. Calculate the coefficient of variation of the weight both in kg and hg

**EXERCISE 4**

A sample is composed by 120 males and 80 females. The following table shows their age in years with the percentage distribution by gender:

|  |  |  |
| --- | --- | --- |
| **Age (years)** | **Males (%)** | **Females (%)** |
| 0-19 | 10 | 20 |
| 20-29 | 10 | 20 |
| 30-49 | 30 | 30 |
| 50-89 | 50 | 30 |
| Total | 100 | 100 |

1. How many people are< 20 years old?
2. What is the percentage of individuals that are≥ 50 years old?
3. How many males are ≥ 30 years old?
4. Find the modal classes for males and females separately and for the total sample
5. Identify the median of the total sample

**EXERCISE 5**

The following table shows the distribution of frequencies of the attitude towards smoking observed in a group of young people.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Age** | | | |
|  | **[16, 18]** | **]18, 22]** | **]22, 25]** | **]25, 30]** |
| **Smoking** **habit** |
| Yes | 7 | 8 | 21 | 30 |
| No | 16 | 18 | 9 | 10 |

1. Calculate the mean age of the smokers and non-smokers
2. Identify the median age class of the smokers and non-smokers
3. Identify the modal age class of the smokers and non-smokers