

1.1 Introduction .To calculate them, we use the method of linear interpolation. Qualitative character They are measures of "types" and may be represented by names or symbols. They are related to categorical variables. The modalities of a qualitative character are words or symbols. Qualitative characters may also be represented by number codes. 6 Quantitative character They are measures of values or counts and are expressed as numbers. They are related to numeric variables. Quantitative characters may be discrete or continuous. – Discrete quantitative character (or discrete statistical variable): It is a variable that takes on distinct and countable values. The set of values of such a variable is finite or countable (at most countable). The modalities are distinct numbers. – Continuous quantitative character (or continuous statistical variable): It is a variable that takes on an infinite number of possible values within a given range. The set of values of such a variable is infinite and uncountable. The modalities are intervals called "Class intervals". Differential diagram (Line graph) The line graph consists of vertical lines representing the values of X . The height of the line corresponding to x_i is determined by either n_i or f_i . Integral diagram (Cumulative frequency curve) To define this graphic, we need first to define the cumulative absolute frequencies and the cumulative relative frequencies., $([e_{k-1}, e_k[, n_k)\}$ be a statistical series corresponding to a continuous statistical variable X . Arithmetic mean The arithmetic mean of X is defined by $\bar{X} = \frac{1}{n} \sum_{i=1}^n x_i = \frac{1}{n} \sum_{i=1}^n n_i c_i = \frac{1}{n} \sum_{i=1}^n f_i c_i$, where $c_i = \frac{e_{i-1} + e_i}{2}$ is the centre of the i th class $[e_{i-1}, e_i]$. 96 2 Introduction In the present course, we study fundamental notions in the descriptive statistics and the probability theory, in accordance with the programs of mathematics of the preparatory classes leading to the engineering institutes, the common cores of sciences and technology, mathematics and computer science and the sciences of matter., $([e_{k-1}, e_k[, n_k)\}$ be a statistical series corresponding to a continuous statistical variable X . Variance and standard deviation The variance of X is defined by $V ar(X) = \frac{1}{n} \sum_{i=1}^n x_i^2 - \bar{X}^2 = \frac{1}{n} \sum_{i=1}^n n_i c_i^2 - \bar{X}^2$ and the standard deviation of X is defined by $\sigma_X = \sqrt{V ar(X)}$. Example 3 (continued): To draw the graphical representations of this statistical series, we need to calculate the magnitudes (di) 1