

Analyzing the Data

- ▶ Statistical data analysis divides the methods for analyzing data into two categories: exploratory methods and confirmatory methods.
- ▶ Exploratory methods are used to discover what the data seems to be saying by using simple arithmetic and easy-to-draw pictures to summarize data.

Exploratory Data Analysis

The objectives of Exploratory Data Analysis are to:

- ▶ Suggest hypotheses about the causes of observed phenomena,
- ▶ Assess assumptions on which statistical inference will be based,
- ▶ Support the selection of appropriate statistical tools and techniques,
- ▶ Provide a basis for further data collection through surveys or experiments.

The Weighted Mean

- ▶ The weighted mean or weighted average is an arithmetic mean in which each value is weighted according to its importance in the overall group.
- ▶ The formulas for the population, and sample weighted means are identical:

$$\mu_w = \bar{x}_w = \frac{\sum w_i x_i}{\sum w_i}$$