

## 2.2 - FREQUENCY DISTRIBUTIONS

\*\*\*Use table 2-1 (p. 47) to introduce the vocabulary.

- Frequency distribution, classes, frequency
- ADVANTAGE of a frequency distribution: makes a list more intelligible
- DISADVANTAGE of a frequency distribution: original data is lost
- Lower and upper CLASS LIMITS
- Class BOUNDARIES

$$\frac{\text{upper class limit of one class} + \text{lower class limit of next class}}{2}$$

- Class MIDPOINTS

within a class do:  $\frac{\text{lower class limit} + \text{upper class limit}}{2}$

- Class WIDTH

difference between 2 consecutive lower class limits

- RELATIVE FREQUENCY

It is a percentage.  $\frac{\text{class frequency}}{\text{sum of frequencies}}$

- CUMULATIVE FREQUENCY

add frequencies at a given class and below

## **FREQUENCY DISTRIBUTION: PULSE RATES OF FEMALES**

Pulse Rate	frequency	relative frequency	cumulative frequency
60 - 69	12		
70 - 79	14		
80 - 89	11		
90 - 99	1		
100 - 109	1		
110 - 119	0		
120 - 129	1		

- a) List the lower class limits
- b) List the upper class limits
- c) List the class boundaries
- d) List the class midpoints
- e) What is the class width?
- f) Construct the relative and the cumulative frequency distributions

## **GUIDELINES TO CONSTRUCT A FREQUENCY DISTRIBUTION**

1. Be sure that classes are mutually exclusive.
2. Include all classes, even if the frequency is zero.
3. Try to use the same width for all classes. (sometimes open-ended interval are impossible to avoid)
4. Use between 5 and 20 classes.
5. The sum of the class frequencies must equal the number of original data values.

## **CONSTRUCTING A FREQUENCY DISTRIBUTION**

***\*\*\*Use the data from table 2-1 Pulse Rates of Males (page 47) to construct a frequency distribution.***

STEPS:

(1) Determine the number of classes (5 to 20)

We will use 6. The number of classes will almost always be given to you.

(2) Find the class width =  $\frac{(\text{highest value}) - (\text{lowest value})}{\text{number of classes}}$  **ROUNDED UP** to a convenient number. (round up to 7)

(3) Select the lower limit of the first class (lowest score or convenient value lower than the lowest score)

(4) Add class width to get next lower limits and display them vertically

(5) Find the upper class limits

(6) Tally each score in the appropriate class and find the total frequency for each class.

## **INTERPRETING FREQUENCY DISTRIBUTIONS**

See Table 2 - 5 on page 50. Also review 2 - 6, 2 - 7 and 2 - 8 on page 51.