



- I. TRUE OR FALSE. Write “True” if the statement is always true; otherwise, write “False”.
1. A text tabulation does not have a heading.
 2. A leader work must have a box head.
 3. We never put a period at the end of the last statement in the head note of a formal statistical table.
 4. If we wish to provide a clarification about the figures in a particular column, then we just write it as a general footnote at the bottom of the formal statistical table and introduce it by writing, “Note:”.
 5. In tabular presentation, the arrangement of the row captions in a block presenting the categories using qualitative classification must always be according to the magnitude of the summary measures presented.
 6. The use of a horizontal bar chart is preferred over a column chart when comparing the magnitudes for the different categories of a qualitative variable.
 7. A pictograph is like a horizontal bar chart but instead of using bars, we use bigger symbols or pictures to portray larger quantities.
 8. $\sum_{i=1}^n (x+2)Y_i = (x+2)\sum_{i=1}^n Y_i$.
 9. $\sum_{i=1}^n iX_i = i\sum_{i=1}^n X_i$
 10. $\sum_{i=50}^{100} 5 = (100)(5)$
- II. Answer the following questions:
1. What do we call the label or caption that describes all of the center heads and row captions that appear in a formal statistical table?
 2. What do we call the caption or label describing the similarities of two or more column heads in a formal statistical table?
 3. How many significant figures are there in each of the following recorded measurements?
 - a) 1.000254
 - b) 354.0100
 - c) 3.35700×10^{-8}
 - d) 0.0057800
 4. What is the class size of each one of the intervals below?
 - a) 12.0 – 20.4
 - b) 0.24 – 0.54
 - c) 10.00 – 15.99

5. If the lower class limit of the first class is 4 and all the class sizes are equal to 8, how many classes will there be if the largest observation is 42?
6. Suppose the lower class limit of the first class is 0.20 and all the class sizes are equal to 0.04.
 - a) What should be the lower class limit of the next class?
 - b) What should be the upper class limit of the first class?
7. What is the upper class boundary of the given class interval for each situation:
 - a) Class interval: 4 to 6.
The data summarized in the frequency distribution table are the observed values of the variable X = number of children.
 - b) Class interval: 4 but less than 6
The data summarized in the frequency distribution table are the observed values of the variable X = age which were recorded by taking the greatest integer (that is, observed value = $\llbracket x \rrbracket$ = largest integer that is less than or equal to the true measure x)
8. If there are 250 observations in the sample data, how many classes should there be if you were to use Sturges' formula? (Write the formula and round-off answer to the nearest integer using the standard rules of rounding.)
9. Given the following greater than cumulative frequency distribution:

Class Boundaries > CF

29.95 – 39.95.....	600
39.95 – 49.95.....	474
49.95 – 59.95.....	474
59.95 – 69.95.....	225
69.95 – 79.95.....	124
79.95 – 89.95.....	86
89.95 – 99.95.....	24

- a) How many observations belong in the first class interval?
- b) What are the class boundaries of the class whose frequency is 0?
- c) How many observations are greater than or equal to 79.95?
- d) What is the total number of observations?
- e) Assuming that the standard rules of rounding was used to record the observations up to the tenth place, what is the lower class limit of the first class?

10. Given the following less than cumulative frequency distribution:

Class Boundaries < CF

50.5 – 60.5.....	24
60.5 – 70.5.....	86
70.5 – 80.5.....	124
80.5 – 90.5.....	225
90.5 – 100.5.....	474
100.5 – 110.5.....	474
110.5 – 120.5.....	500

- a) How many observations belong in the last class?
- b) What are the class boundaries of the class whose frequency is 0?
- c) How many observations are less than or equal to 90.5?

11. How many terms are there in the expansion of the summation, $\sum_{i=32}^{34} X^i$?

12. What is the expansion of the summation:

a) $\sum_{i=4}^6 \sqrt{yX_i}$

b) $\sum_{x=6}^{10} 3i$

13. How do we express each of the following sums using the summation notation with x as the index?

a) $(2^1 + 1)^2 + (2^2 + 1)^4 + (2^3 + 1)^6 + (2^4 + 1)^8 + (2^5 + 1)^{10} + (2^6 + 1)^{12}$

b) $\frac{8}{65} + \frac{9}{82} + \frac{10}{101} + \frac{11}{122} + \frac{12}{145}$

14. Suppose $\sum_{i=1}^{50} X_i = 200$ and $\sum_{i=1}^{50} X_i^2 = 12,250$. What is the computed value of each of the following summations?

a) $\sum_{i=1}^{50} (X_i - 2)$

b) $\sum_{i=1}^{50} \frac{X_i}{5}$

c) $\sum_{i=1}^{50} (X_i - 2)^2$

15. Given the following data:

i	1	2	3	4	5
X_i	4	2	8	5	5
Y_i	4	1	16	1	25

What is the computed value of the following summations? (Final answer must not involve fractions and/or radicals.)

a) $\sum_{i=1}^5 \frac{X_i}{Y_i}$

b) $\frac{\sum_{i=1}^5 X_i}{\sum_{i=1}^5 Y_i}$

$$c) \sqrt{1.21 + \sum_{i=1}^5 \sqrt{Y_i}}$$

$$d) \frac{6}{\left(\sum_{i=1}^5 X_i\right)\left(\sum_{i=1}^5 Y_i\right)}$$

$$e) \sum_{i=3}^5 \frac{1}{X_2}$$

III. A sample of AAA batteries were tested to determine how long will they last. The results, rounded to the nearest tenths place using the standard rules of rounding, were summarized in a frequency distribution table as follows:

Length of life (in minutes)	Number of Batteries
362.0 – 373.9.....	8
374.0 – 385.9.....	12
386.0 – 397.9.....	40
398.0 – 409.9.....	32
410.0 – 421.9.....	28
422.0 – 433.9.....	16
434.0 – 445.9.....	9
446.0 – 457.9.....	5

1. What are the class marks of each one of the classes? Present computation for the first class only.
2. What are the lower and upper class boundaries of each class? Present computation for the first class only.
3. Present the frequency polygon.
4. Construct the less than cumulative frequency distribution and greater than cumulative frequency distribution.
5. Present the less than ogive.

IV. Below is the frequency distribution of the length of time (in minutes, rounded-off using standard rules of rounding) that each visitor stayed in the museum:

Length of stay (in minutes)	Number of Visitors
25 - 39.....	20
40 - 54.....	33
55 - 69.....	60
70 - 99.....	42
100 - 129.....	12
130 - 159.....	4

1. Compute for the adjusted frequencies, using 15 as the unit class size.
2. Present the frequency histogram.