

Chapter III

Measures of Location

(Exercises)

3. 1.

Calculate the mean salary for

1. 5 women whose salaries are (in thousands dollars, rounded)

9, 12, 8, 10, 16

2. 25 men whose salaries were (in thousands, rounded)

Salaries	Frequency
10	7
15	10
20	5
25	2
30	1

3. 2.

There are twelve car manufacturing companies in the United States. Listed below is the number of patents granted by the United States government to each company in each year:

Company	Number of Patents Granted	Company	Number of Patents Granted
General Motors	511	Mazda	210
Nissan	385	Chrysler	97
DaimlerChrysler	275	Porsche	50
Toyota	257	Mitsubishi	36
Honda	249	Volvo	23
Ford	234	MMW	13

1. Is this information a sample or a population?
2. What is the arithmetic mean of patents granted?

3. 3.

A company pays its hourly employees 16.50 €, 19.00€, or 25.00 € per hour. There are 26 hourly employees, 14 of which are paid at the 16.50 € rate, 10 at the 19.00 € rate, and 2 at the 25.00 € rate.

What is the mean hourly rate paid of the 26 employees?

3. 4.

The annual salaries [\$] of quality-control managers in selected states of the United States are shown below:

State	Salary	State	Salary	State	Salary
Arizona	35000	Illinois	58000	Ohio	50000
California	49100	Louisiana	60000	Tennessee	60000
Colorado	60000	Maryland	60000	Texas	71400
Florida	40000	Massachusetts	40000	West Virginia	60000
Idaho		New Jersey	45000	Wyoming	55000

What is the modal annual salary?

3. 5.

The kilometres travelled by 20 students in coming to university from their homes are given below:

0.8	1.2	2.6	2.8	3.3
3.4	3.7	4.0	4.5	5.3
5.8	6.1	6.2	6.5	7.1
7.3	7.4	7.6	7.8	9.2

Classify the students into following groups

$$[0, 2[, [2, 4[, \dots, [8, 10[$$

and calculate

1. the mean
2. the median
3. the mode

of the kilometres travelled by the 20 students.

3. 6.

Find the average rate of increase of the annual sales from 2001 to 2005 if a company had 5000 € sales in 2001 and 10368 € in 2005.

3. 7.

Suppose you receive a 5 percent increase in salary this year and a 15 percent increase next year.

What will be the average annual percent increase?

3. 8.

The return on investment earned by a construction company for four successive years was: 30 percent, 20 percent, - 40 percent, and 100 percent.

What is the mean rate of return on investment?

3. 9.

Listed below are the commissions [\$] earned by a sample of brokers

2038	1758	1721	1637	2097
2047	2205	1787	2287	1940
2311	2054	2406	1471	1460

Locate the median, the first quartile, and the third quartile for the commissions earned.

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