



Elements of Statistics and Probability

Exercises using R: Descriptive Statistics

The following table includes data about the performance of 20 students:

Chemistry	Physics	Mathematics	Literature	Sex	Year
93	42	98	34	Male	1
71	67	68	33	Male	1
77	59	36	24	Male	1
78	70	92	24	Male	1
77	59	44	31	Male	1
81	50	45	22	Male	2
88	50	58	23	Female	2
74	51	31	32	Female	2
67	45	70	31	Female	2
78	64	46	26	Female	2
77	49	41	75	Male	1
67	49	46	81	Male	1
63	48	65	87	Female	1
83	51	62	100	Female	1
73	56	20	81	Female	1
70	47	22	100	Female	2
78	53	92	77	Male	2
95	56	56	89	Male	2
88	49	28	100	Male	2
75	71	94	77	Male	2

- Enter the data into a data frame.
- For each gender, compute the average score at each course.
- Find the max score at each course.
- Find the max score for all courses.
- Compute the average score for each student and rank the students according to their mean score. Repeat the above computation and ranking for each year separately.
- Who is the best student? Standardize the scores in order to be comparable and compute the average standardized score for each student.
- What is the percentage of students who succeeded (score ≥ 50) at all courses?
- What is the average score and variance for the successful students?