

405 Homework

Descriptive statistics: (Use Excel or some equivalent spreadsheet program to help you).

Consider the following numbers

A	B	C	D	E	F
1	0	16	7	1	1
2	7	17	62	12	2
3	0	9	0	5	4
4	7	18	35	18	8
5	7	13	5	28	16
6	8	11	10	78	32
7	9	13	14	0	64
8	2	10	48	46	128
9	7	16	0	23	256
10	3	10	13	23	512
11	4	14	8	11	1024
12	4	12	9	34	2048
13	3	22	5	10	4096
14	0	10	59	5	8192
15	5	13	96	24	16384
16	7	22	97	43	32768

For each column, find the (arithmetic) mean, median, and standard deviation. How well do these conventional statistics describe the basic characteristics of the data?

Arithmetic mean

Median

Standard Deviation

average	8.5	4.6	14.1	29.3	22.6	4095.9
median	8.5	4.5	13.0	11.5	20.5	192.0
stdev	4.8	3.0	4.1	33.2	20.4	8806.2

By examining the data, there are possible transformations that might better capture the underlying characteristics of each column. What transforms would you recommend that would make the data easier to understand? Find the same descriptive statistics on these transformed data.

Note what happens when you sort the data within columns:

A	B	C	D	E	F
1	0	9	0	0	1
2	0	10	0	1	2
3	0	10	5	5	4
4	2	10	5	5	8
5	3	11	7	10	16
6	3	12	8	11	32
7	4	13	9	12	64
8	4	13	10	18	128
9	5	13	13	23	256
10	7	14	14	23	512
11	7	16	35	24	1024
12	7	16	48	28	2048
13	7	17	59	34	4096
14	7	18	62	43	8192
15	8	22	96	46	16384
16	9	22	97	78	32768

Now, find the following descriptive statistics:

Minimum

Maximum

Range

Interquartile range

Mean

Median