

Run Chart Rules and Table

Instructions: run charts calculate the number of runs within a series of data. By analysing run charts it is possible to conclude that a non-random pattern has emerged. This occurs in a number of instances:

1. When there is a **SHIFT** = six or more consecutive points above or below the median
2. When there is a **TREND** = five or more consecutively increasing or decreasing points
3. When there is an **ASTRONOMICAL POINT** = a data point dramatically different from all others
4. When there are **TOO MANY OR TOO FEW RUNS** = data that does not conform to the rules in the table below:

Total number of data points on the run chart that do not fall on the median	Lower limit (i.e. below number stated = too few)	Upper limit (i.e. above number stated = too many)
10	3	9
11	3	10
12	3	11
13	4	11
14	4	12
15	5	12
16	5	13
17	5	13
18	6	14
19	6	15
20	6	16
21	7	16
22	7	17
23	7	17
24	8	18
25	8	18

Table is based on about a 5% risk of failing the run test for random patterns of data.

Adapted from Swed FS and Eisenhard C. Tables for testing randomness of grouping in a sequence of alternatives.