

Exercises

Ex.1. The data in Table E.1 give the number of nonconforming bearing and seal assemblies in samples of size 100. Construct a fraction nonconforming control chart for these data. If any points plot out of control, assume that assignable causes can be found and determine the revised control limits.

Ex.2. The number of nonconforming switches in samples of size 150 are shown in Table E.2. Construct a fraction nonconforming control chart for these data. Does the process appear to be in control? If not,

■ **TABLE E.1**

Data for Exercise .1

Sample Number	Number of Nonconforming Assemblies	Sample Number	Number of Nonconforming Assemblies
1	7	11	6
2	4	12	15
3	1	13	0
4	3	14	9
5	6	15	5
6	8	16	1
7	10	17	4
8	5	18	5
9	2	19	7
10	7	20	12

■ **TABLE E.2**

Number of Nonconforming Switches

Sample Number	Number of Nonconforming Switches	Sample Number	Number of Nonconforming Switches
1	8	11	6
2	1	12	0
3	3	13	4
4	0	14	0
5	2	15	3
6	4	16	1
7	0	17	15
8	1	18	2
9	10	19	3
10	6	20	0

■ **TABLE E.3**

Personal Computer Inspecting Results

Day	Units Inspected	Nonconforming Units	Fraction Nonconforming
1	80	4	0.050
2	110	7	0.064
3	90	5	0.056
4	75	8	0.107
5	130	6	0.046
6	120	6	0.050
7	70	4	0.057
8	125	5	0.040
9	105	8	0.076
10	95	7	0.074

assume that assignable causes can be found for all points outside the control limits and calculate the revised control limits.

Ex.3. The data in Table E.3 represent the results of inspecting all units of a personal computer produced for the past ten days. Does the process appear to be in control?

Ex 4 Surface defects have been counted on twenty-five rectangular steel plates, and the data are shown in Table E.4. Set up a control chart for nonconformities using these data. Does the process producing the plates appear to be in statistical control?

■ **TABLE E.4**

Plate Number	Number of Nonconformities	Plate Number	Number of Nonconformities
1	1	14	0
2	0	15	2
3	4	16	1
4	3	17	3
5	1	18	5
6	2	19	4
7	5	20	6
8	0	21	3
9	2	22	1
10	1	23	0
11	1	24	2
12	0	25	4
13	8		