

Below are the spreadsheets and control charts for Customer Complaints  
In the Alpha Services case.

Alpha Services, Inc.

Complaints by Clients											
Month	A	Be	Bw	C	D	E	F	G	H	I	
1	2	5	7	3	2	3	2	4	3	4	
2	1	6	8	2	1	1	2	3	2	5	
3	0	6	8	1	0	2	2	4	0	1	
4	1	5	4	1	0	1	1	4	1	3	
5	1	3	2	2	0	1	1	3	1	2	
6	2	5	3	0	1	0	0	2	1	0	
7	0	4	2	1	0	0	0	0	0	1	
8	1	2	4	2	1	0	1	2	1	1	
9	1	2	4	1	1	0	1	1	3	0	

Average by Crews										
Month	Range for all clients	Average for all clients	Crew 1 - San Jose	Crew 2 - Raleigh	Crew 3 - Sydney	Crew 4 - Mumbai	UCL	LCL	Xbar	
1	5.00	3.50	2.33	4.00	5.50	3.00	3.52	0.44	1.98	
2	7.00	3.10	1.67	4.00	5.50	2.33	3.52	0.44	1.98	
3	8.00	2.40	1.00	3.00	6.00	1.00	3.52	0.44	1.98	
4	5.00	2.10	1.00	3.00	4.00	1.33	3.52	0.44	1.98	
5	3.00	1.60	1.33	2.00	2.50	1.00	3.52	0.44	1.98	
6	5.00	1.40	0.67	3.00	2.50	0.33	3.52	0.44	1.98	
7	4.00	0.80	0.33	2.00	1.00	0.33	3.52	0.44	1.98	
8	4.00	1.50	1.33	1.50	3.00	0.67	3.52	0.44	1.98	
9	4.00	1.40	1.00	2.50	2.50	0.33	3.52	0.44	1.98	
Average	5.00	1.98	1.19	2.78	3.61	1.15				

$$\begin{aligned} \text{UCL} &= \text{Xbar} + A2R\text{bar} = 1.98 + (0.308)(5.0) = 3.52 \\ \text{LCL} &= \text{Xbar} - A2R\text{bar} = 1.98 - (0.308)(5.0) = 0.44 \end{aligned}$$

### Figure 1. Control Chart for Complaints

