out of control

1个点在3sigma范围之外

3个连续的值中至少有两个的值落在同一个边上，和两个以上的sigma单位远离中心线。

5个连续的值中至少4个值落在同一边，和一个以上sigm单位远离中心线。

至少8个连续的值落在中心线的同一边

用Xbar chart建立变量表

 we group the data into subgroups of n sequential values. For each subgroup, we compute ri, the range of the values, and Xi, the average of the values.

The control chart will be a plot of the raw data values (in order). The upper control limit (UCL), lower control limit (LCL), and the center line (CL) are computed as follows:

UCLX = Xave + A2 Rave

LCLX = Xave - A2 Rave

CLX = Xave

Where Xave is the average of the Xi values, Rave is the average of the range values, and A2 is a constant that depends on the size of the groups we created, as shown in the table below.