

## Answer on Question #84109 – Math – Statistics and Probability

### Question

Refills of cartons with apple juice is taking place in a plant. Data for 14 days were collected and 100 cartons were checked every day for proper filling. Data is as given below. Compute the UCL, LCL and CL using an appropriate control chart. Also draw the chart.

S.NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Date	16	17	18	19	20	21	22	23	24	25	26	27	29	30
X	8	2	4	1	3	3	2	4	9	7	5	8	5	9
Total	70													

### Solution

Find the mean value ( $\bar{X}$ )

$$\bar{x} = \frac{8 + 2 + 4 + 1 + 3 + 3 + 2 + 4 + 9 + 7 + 5 + 8 + 5 + 9}{14} = \frac{70}{14} = 5$$

$$CL = \bar{x} = 5$$

$$UCL = \bar{x} + z\sqrt{\bar{x}} = 5 + 3\sqrt{5} = 11.708$$

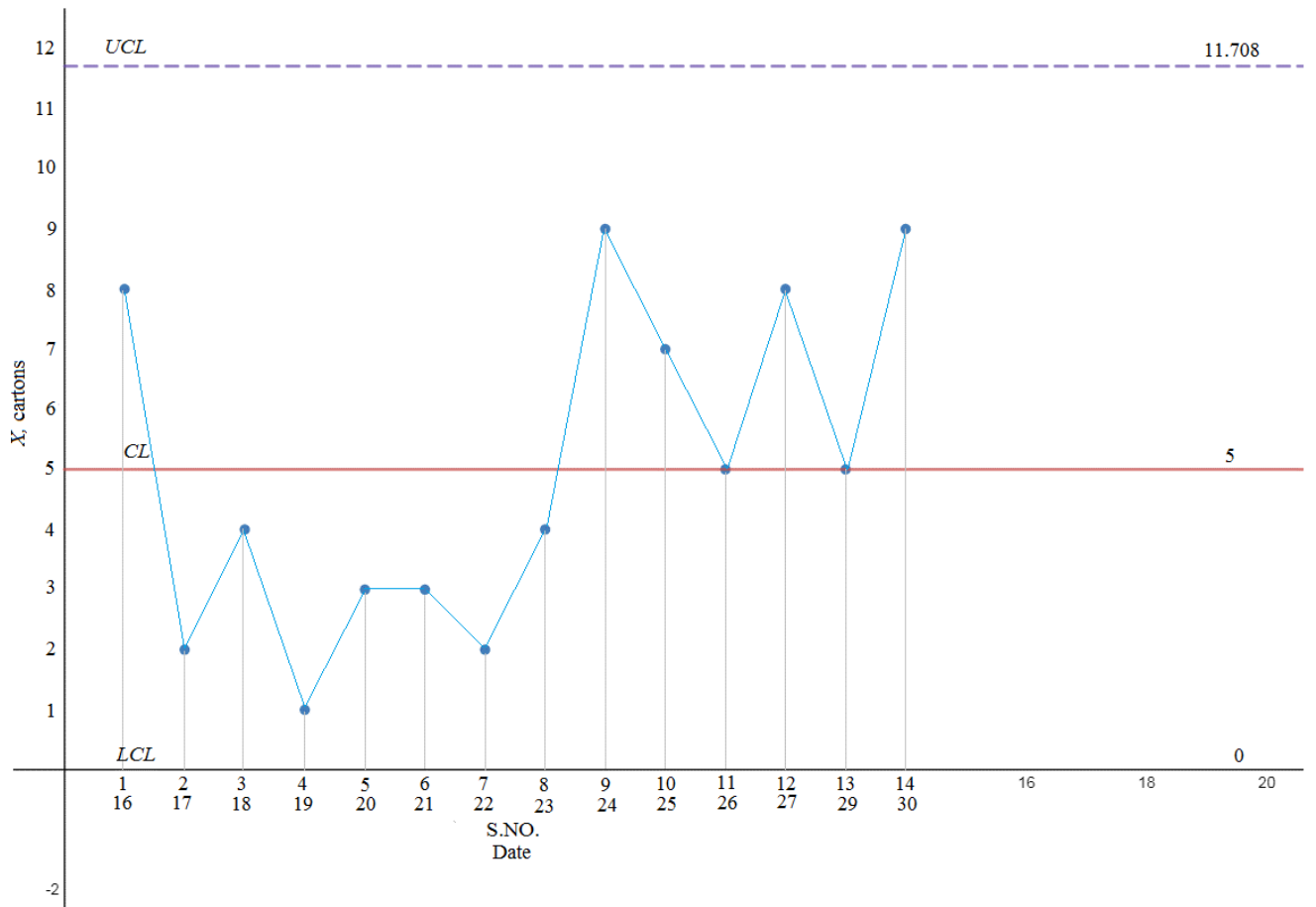
$$LCL = \bar{x} - z\sqrt{\bar{x}} = 5 - 3\sqrt{5} = -1.708$$

If  $LCL$  is negative then it is taken as zero.

$$CL = 5$$

$$UCL = 11.708$$

$$LCL = 0$$



Answer provided by <https://www.AssignmentExpert.com>