Quick Questions 17   Statistical Quality Control
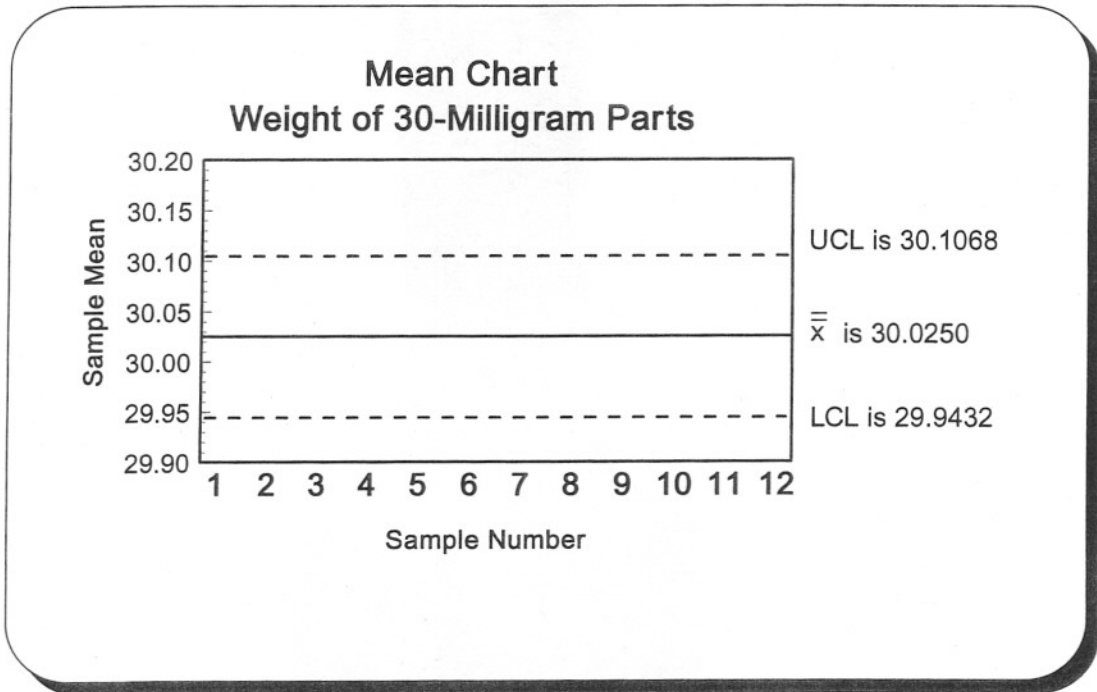
I. Place the number of the appropriate formula, expression, or term next to the concept it describes.

A. A control chart _____

B. Assignable variation _____

C. Random variation _____

D. An $\bar{x}$ chart _____

E. A range chart _____

F. A p chart _____

1.	Measures whether the mean size, weight, or temperature, etc., is getting too high or too low.
2.	Measures whether the proportion of some attribute (defects) is appropriate.
3.	Results from an identifiable cause
4.	Is due to chance
5.	Measures a process value (statistic) sequentially over a period of time
6.	Measures whether variation in size, weight, or temperature, etc., is too large.

II. Control charts developed in Practice Set 17 will now be used to determine whether the 30-milligram part manufacturing process is in control. Plot this data on the appropriate control chart and determine whether the process is in control.

Sample	A	B	C	D	E	F	G	H	I	J	K	L
Sample Mean	29.98	30.04	30.08	30.02	29.97	30.04	30.09	30.15	30.10	30.12	30.14	30.16
Sample Range	0.07	0.09	0.11	0.13	0.10	0.09	0.08	0.14	0.18	0.21	0.22	0.21
Proportion of Defects	0.08	0.11	0.14	0.17	0.23	0.21	0.19	0.17	0.11	0.09	0.12	0.21

Mean Chart
Weight of 30-Milligram Parts

UCL is 30.1068

$\bar{\bar{x}}$ is 30.0250

LCL is 29.9432

Sample Mean (y-axis: 29.90, 29.95, 30.00, 30.05, 30.10, 30.15, 30.20)

Sample Number (x-axis: 1 2 3 4 5 6 7 8 9 10 11 12)

Analysis: