Midterm Exam: Due Thurs 10/24 by 1:50pm ET

● Graded

Student

Ivan Wang

Total Points

37 / 60 pts

Question 1

Problem 1

6 / 8 pts

✔ **− 2 pts** errors in both "meet specs" probabilities indicated on paper

Question 2

Problem 2

7 / 8 pts

✔ **− 1 pt** some minor errors in conclusions as indicated on paper

Question 3

Problem 3

21 / 30 pts

✔ **− 4 pts** parts (d)-(g): using $L = 3$ in all charts

✔ **− 2 pts** part (a): process mean should be estimated using $\overline{\overline{x}}$

✔ **− 2 pts** parts (d)-(e): using the wrong value of L in the calculations; calculated LCL for R-chart is incorrect based on your values.

✔ **− 1 pt** parts (f)-(g): wrong value of L used in the calculation of the limits

Question 4

Problem 4

3 / 14 pts

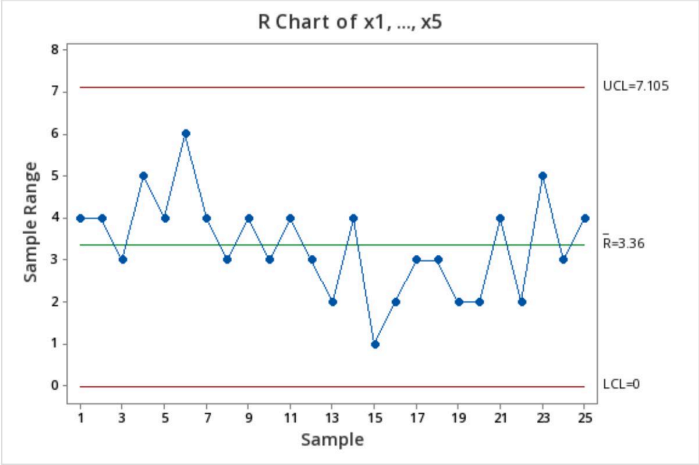
✔ **− 3 pts** part (a): (i) using st dev of $\overline{x}$ rather than "process st dev". (ii) using control limits instead of specification limits.

✔ **− 6 pts** parts (b), (d): nothing submitted

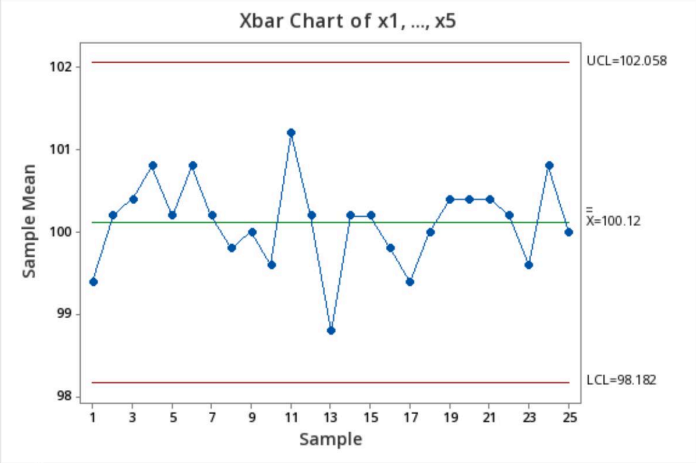
✔ **− 2 pts** part (c): on the right track, except supposed to use your control limits from problem 3(e). Need to finish the calculation of the z-scores, and then get the area outside of them.

Questions assigned to the following page: 1, 3, and 2

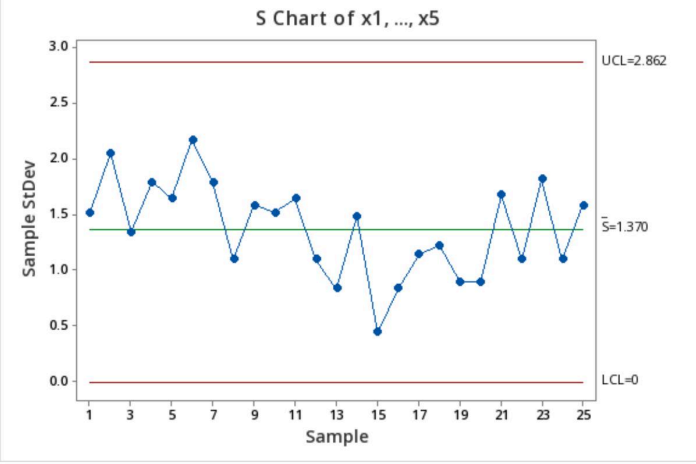
3d)


R Chart of x1, ..., x5
Sample Range
Sample
UCL=7.105
R̄=3.36
LCL=0

3e)

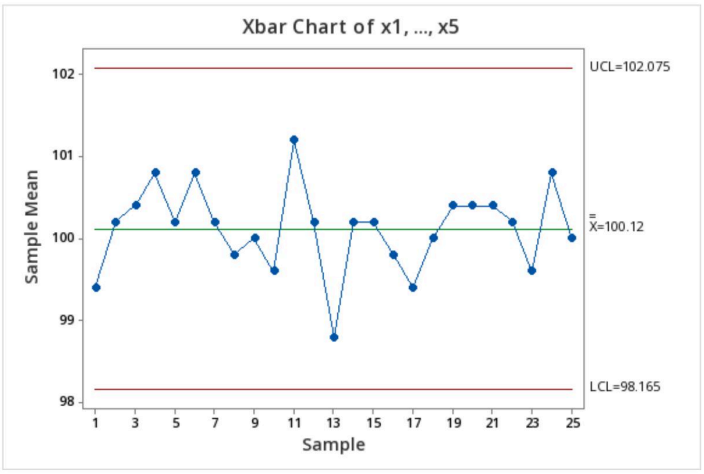

Xbar Chart of x1, ..., x5
Sample Mean
Sample
UCL=102.058
X̿=100.12
LCL=98.182

3f)


S Chart of x1, ..., x5
Sample StDev
Sample
UCL=2.862
S̄=1.370
LCL=0

Question assigned to the following page: 4

3g)


Xbar Chart of x1, ..., x5
UCL=102.075
=
X=100.12
LCL=98.165
Sample Mean
Sample
102
101
100
99
98
1
3
5
7
9
11
13
15
17
19
21
23
25