SINCLAIR COMMUNITY COLLEGE
Test #1
QET 201

Name _____

Problem #1 (10 points)

Determine the average, sample standard deviation and range for the following data for a Knob. Collected on April 29, 1945. Coded times .001"

546	549	545	546	548	548	546	546	544	549	542
545	545	547	543	546	546	548	547	548	548	543
546	544	548	545	544	548	545	544	544	544	549

Problem #2 (10 points)

Construct a histogram from the data in problem #1

Problem #3 (20 points)

A packaging operation is to provide 20.0 grams of a product in each container. After the process had stabilized, 100 packages were checked, and the results are shown in the frequency distribution found in Problem #4 below.

Compute the average and sample standard deviation,
Compute the process limits defined as the average +/- 3 σ
What theoretical % of the containers would have less than 20.0 grams?

Problem #4 (30 points)

Construct a Normal Probability plot of the following data, **graphically** determine the **average, standard deviation, 6σ spread, and the percent out of specification given the minimum specification of 20.0 grams**. **Comment on the normality of the data.**

Weight	Frequency
19.9	1
20.0	0
20.1	6
20.2	9
20.3	25
20.4	18
20.5	19
20.6	12
20.7	6
20.8	2
20.9	2
21.0	0

Problem #5 (30 points)

Perform a measurement analysis on the following data (in inches) of piston retraction tester run at 1000 psi. Does this piston retraction tester providing sufficient measurement discrimination (5-1 ratio). Would your answer change if the last data set was 0.205-0.205 instead of 0.0205-0.0205? Explain.

Run 1	Run 2	Run 1	Run 2	Run 1	Run 2
.0175	.0165	.0145	.0135	.0165	.0140
.0135	.0135	.0155	.0155	.0155	.0150
.0155	.0140	.0145	.0145	.0175	.0175
.0130	.0125	.019	.018	.019	.018
.0155	.0155	.0185	.0195	.0150	.0155
.0155	.0140	.0135	.0135	.0135	.014
.0135	.0135	.0160	.0155	.0155	.014
.018	.0175	.016	.0175	.0170	.0155
.0200	.0190	.0165	.0170	.015	.015
.019	.0185	.0145	.0140	.0205	.0205