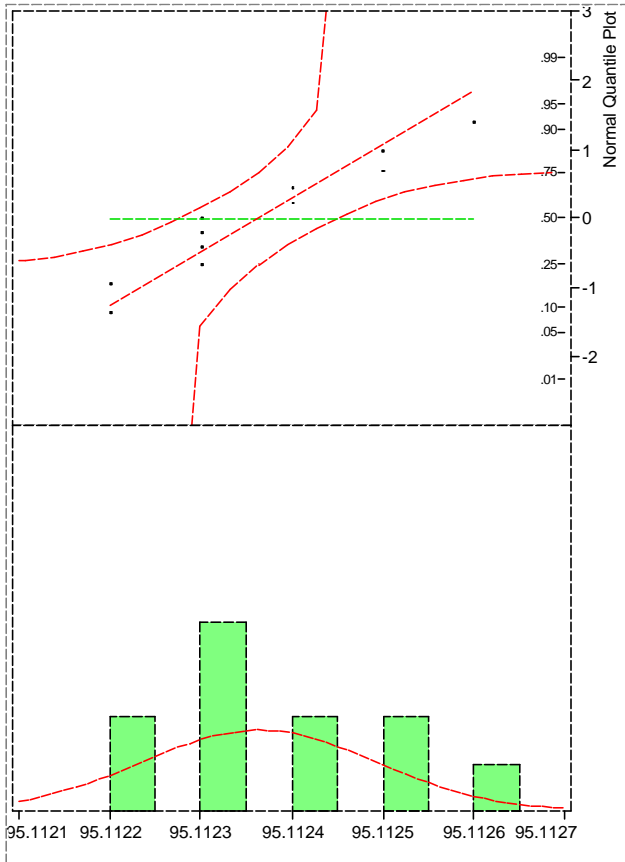


Stat 328 Lab #1 Key Summer 2000

- (a) $\bar{y} = 95.1124$ $s = 0.000129$
- (b) Attached is a normal plot, histogram and some intervals for μ and σ made using JMP 4.0. The normal curve fitted on the histogram and the confidence intervals for μ and σ were added under the **Fit Distribution** menu. (In JMP-IN 3.2.6 you can get the normal curve from the checkmark on the lower left corner of the report. I haven't figured out if JMP-IN 3.2.6 will give the confidence interval for σ .)
- (c) 95% Confidence interval for μ : (95.1123,95.1124)
95% Confidence interval for σ : (9.013445×10^{-5} , 2.263865×10^{-4})
- (d) 95% prediction interval for a single additional observation: (95.1121,95.1127)
- (e) The scale is inaccurate.
- (f) The scale is precise.
- (g) 99.99% and 93.55% respectively.
- (h) $P(\text{Weight} < 111.2) = 0.16028$
 $P(\text{Weight} > 111.2) = 0.12765$
- (i) $P(\text{Weight}) < 113.2) = 0.25536$
 $P(\text{Weight}) > 113.2) = 0.070355$
 $P(\text{Weight} < 109.2) = 0.091947$
 $P(\text{Weight} > 109.2) = 0.21127$
- (j) $\alpha = .16028$ (from (h)!!)
- (k) Yes. If σ could be cut in half, 2.34% of complete consumer units will fail the final inspection and 1.14% of consumer units missing the plastic bag will pass the final inspection.
- (l) $P(\text{Weight} < 123.47) = 0.01976$
 $P(\text{Weight} < 129.82) = 0.00089156$
- (m) $3.08 = \frac{(104.42+6.35x-5.92)-104.42}{5.96} \Rightarrow x = 3.82$

Distributions

y



Fitted Normal

Parameter Estimates

| Type | Parameter | Estimate | Lower 95% | Upper 95% |
|------------|-----------|----------|-----------|-----------|
| Location | Mu | 95.11236 | 95.11228 | 95.11245 |
| Dispersion | Sigma | 0.00013 | 0.00009 | 0.00023 |