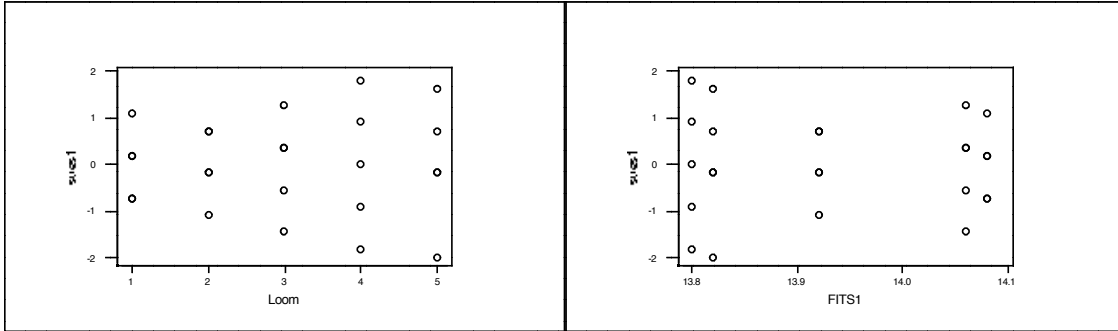ONE RANDOM EFFECT EXAMPLE

A textile mill has a large number of looms. Each loom is supposed to provide the same output per minute. To test this assumption, five looms are chosen at random. Each loom's output is recorded at five different times.
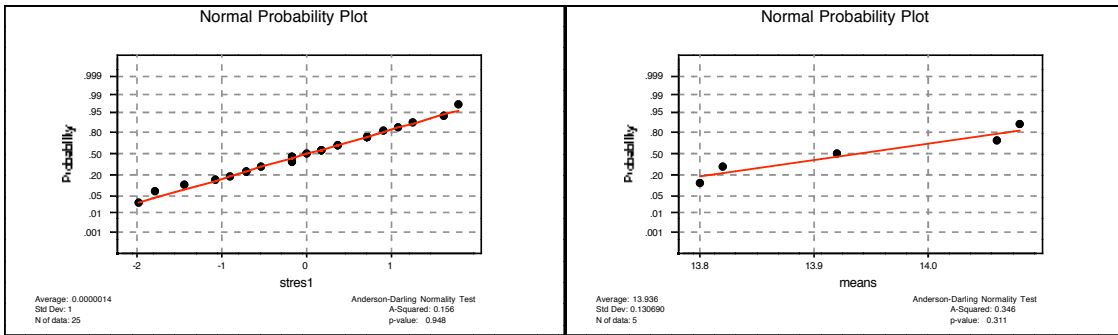
Check the model: Run on Minitab to get residuals and fits. Make model-checking plots:

Standardized residuals vs factor levels and fits:

Max and min sample standard deviations by level: 0.753 and 1.424

Normal probability plots of standardized residuals and level means:

Analysis of Variance table:

Source	DF	SS	MS	F	P
Loom	4	0.34160	0.08540	5.77	0.003
Error	20	0.29600	0.01480		
Total	24	0.63760			