CAPABILITY ANALYSIS

PURPOSE

Generates a table of capability analysis statistics.

DESCRIPTION

The $C_p$, $C_{pk}$, percent defective, and expected loss statistics are printed in a table. These statistics are computed for the full sample. See the documentation for $CP$, $CPK$, PERCENT DEFECTIVE, and EXPECTED LOSS in chapter 2 of Volume II of the reference manual for the definitions of these statistics and the details on how they are calculated.

SYNTAX

```
CAPABILITY ANALYSIS <y> <SUBSET/EXCEPT/FOR qualification>
```

where <y> is a response variable;
and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

```
CAPABILITY ANALYSIS Y
CAPABILITY ANALYSIS Y SUBSET GROUP = 1 TO 6
```

NOTE

The upper and lower specification limits, the target value, and the cost value must be specified by the user as follows:

```
LET LSL = <value>
LET USL = <value>
LET TARGET = <value>
LET USLCOST = <value>
```

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>Computes the $C_p$ statistic for a variable.</td>
</tr>
<tr>
<td>CPK</td>
<td>Computes the $C_{pk}$ statistic for a variable.</td>
</tr>
<tr>
<td>PERCENT DEFECTIVE</td>
<td>Computes the percent defective statistic for a variable.</td>
</tr>
<tr>
<td>EXPECTED LOSS</td>
<td>Computes the expected loss statistic for a variable.</td>
</tr>
<tr>
<td>CP PLOT</td>
<td>Generates a $C_p$ versus subset plot.</td>
</tr>
<tr>
<td>CPK PLOT</td>
<td>Generates a $C_{pk}$ versus subset plot.</td>
</tr>
<tr>
<td>EXPECTED LOSS PLOT</td>
<td>Generates an expected loss versus subset plot.</td>
</tr>
<tr>
<td>PERCENT DEFECTIVE PLOT</td>
<td>Generates a percent defective versus subset plot.</td>
</tr>
<tr>
<td>BOX PLOT</td>
<td>Generates a box plot.</td>
</tr>
<tr>
<td>XBAR CHART</td>
<td>Generates an xbar control chart.</td>
</tr>
<tr>
<td>PLOT</td>
<td>Generates a data or function plot.</td>
</tr>
</tbody>
</table>

APPLICATIONS

Quality Control

IMPLEMENTATION DATE

94/2
PROGRAM

SKIP 25
READ GEAR.DAT DIAMETER BATCH
.
LET LSL = 0.99
LET USL = 1.01
LET TARGET = 1.00
LET USLCOST = 10
.
CAPABILITY ANALYSIS DIAMETER

**************************************************************
*            CAPABILITY ANALYSIS           *
*   NUMBER OF OBSERVATIONS =      100    *
**************************************************************
*  LOWER SPEC LIMIT  (LSL) =      0.99000  *
*  UPPER SPEC LIMIT  (USL) =      1.01000  *
*  TARGET         (TARGET) =      1.00000  *
*  USL COST      (USLCOST) =     10.00000  *
**************************************************************
*  CP                      =      0.53088  *
*  CPK                     =      0.40559  *
*  ACTUAL      % DEFECTIVE =     10.00000  *
*  THEORETICAL % DEFECTIVE =     13.63513  *
*  EXPECTED LOSS           =      4.49944  *
**************************************************************