

## POLYNOMIAL DEGREE

### PURPOSE

Specifies the polynomial degree for certain variations of the SMOOTH, SPLINE FIT, and FIT commands.

### DESCRIPTION

The syntax for the SMOOTH, SPINE FIT, and FIT commands allows the analyst to imbed the desired degree directly in the command, as a pre-word, as in

```
CUBIC SMOOTH Y
QUINTIC SPLINE FIT Y X K
QUARTIC FIT Y X
```

If the analyst chooses not to use such a pre-word, the degree information can be conveyed via the POLYNOMIAL DEGREE command, as in

```
POLYNOMIAL DEGREE 3
SMOOTH Y
POLYNOMIAL DEGREE 5
SPLINE FIT Y X K
POLYNOMIAL DEGREE 4
FIT Y X
```

In practice, imbedding degree information directly in the command is much more popular than using the POLYNOMIAL DEGREE command.

### SYNTAX

```
POLYNOMIAL DEGREE <n>
```

where <n> is an integer number or parameter that is the desired degree of the polynomial in certain forms of the FIT, SPLINE FIT, and SMOOTH commands.

### EXAMPLES

```
POLYNOMIAL DEGREE 3
POLYNOMIAL DEGREE 1
```

### NOTE

The POLYNOMIAL DEGREE command with no arguments reverts the polynomial degree to default.

### DEFAULT

For smoothing --1 (= linear);  
for spline fitting--3 (= cubic);  
for fitting --1 (= linear).

### SYNONYMS

None

### RELATED COMMANDS

FIT	=	Carries out a least squares fit.
SPLINE FIT	=	Carries out a spline fit.
SMOOTH	=	Carries out a smoothing.
FILTER WIDTH	=	Set the filter width for the SMOOTH command.

### APPLICATIONS

Fitting and smoothing

### IMPLEMENTATION DATE

Pre-1987

### PROGRAM

```
SKIP 25; READ BERGER1.DAT Y X
POLYNOMIAL DEGREE 2
FIT Y X
```