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Find Power-of-Ten Scale for Printing

PSCALE gives the power of ten by which it is necessary to multiply a REAL number A for the purpose of obtaining a new REAL number B having a fixed number of digits on the left of the decimal point.

Structure:

FUNCTION subprogram
User Entry Names: PSCALE

Usage:

```
FACT=PSCALE(N,NMAX,A,IDIG)
```

returns the largest N and its power FACT = 10.0**N, such that FACT*A has at most IDIG digits to the left of the decimal point. N is limited to ≤ NMAX, however.

Examples:

Suppose we have an array B(100), which we want to print with a FORMAT(10F10.3). Using VMAXA (F121) we find the smallest number BMAX, such that BMAX ≥ |B(I)| for all I. Then

```
FACT=PSCALE(N,9,BMAX,4)
```

allows us to print the vector FACT*B(I) with the above FORMAT. The following sample values of BMAX give values for FACT as indicated below:

BMAX	FACT
1234567800.	10.0**(-6)
1234567.8	10.0**(-3)
1234.5678	1
1.2345678	10.0**3
0.0012345678	10.0**6
1234.5678*10.0**(-9)	10.0**9
1234.5678*10.0**(-12)	10.0**9
0.0	10.0**9

All FACT*BMAX but the two last ones, will be printed as 1234.567.

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