

NAG Library Routine Document

F06RPF

Note: before using this routine, please read the Users' Note for your implementation to check the interpretation of *bold italicised* terms and other implementation-dependent details.

1 Purpose

F06RPF returns, via the function name, the value of the 1-norm, the ∞ -norm, the Frobenius norm, or the maximum absolute value of the elements of a real n by n symmetric tridiagonal matrix A .

2 Specification

double precision FUNCTION F06RPF(NORM, N, D, E)

INTEGER

N

double precision

D(*), E(*)

CHARACTER*1

NORM

3 Description

None.

4 References

None.

5 Parameters

1: NORM – CHARACTER*1

Input

On entry: specifies the value to be returned.

NORM = '1' or 'O'

The 1-norm.

NORM = 'I'

The ∞ -norm.

NORM = 'F' or 'E'

The Frobenius (or Euclidean) norm.

NORM = 'M'

The value $\max_{i,j} |a_{ij}|$ (not a norm).

Constraint: NORM = '1', 'O', 'I', 'F', 'E' or 'M'.

2: N – INTEGER

Input

On entry: n , the order of the matrix A .

When $N = 0$, F06RPF is set to zero.

Constraint: $N \geq 0$.

3: D(*) – *double precision* array

Input

Note: the dimension of the array D must be at least $\max(1, N)$.

On entry: the n diagonal elements of the tridiagonal matrix A .

4: $E(*)$ – *double precision* array

Input

Note: the dimension of the array E must be at least $\max(1, N - 1)$.

On entry: the $(n - 1)$ subdiagonal or superdiagonal elements of the tridiagonal matrix A .

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

None.
