ALGORITHM 24
SOLUTION OF TRI-DIAGONAL LINEAR EQUATIONS
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procedure TRIDAG (n, A, B, C, D) ; integer n ;
array A, B, C, D ;
comment: This procedure finds the solution of an \( n \times n \) system
of linear equations whose matrix is in tridiagonal form, that
is, \( a_{ij} = 0 \) for \( |i - j| \neq 2 \). Parameters are: the main diagonal
\( B_p \), the diagonal just below \( A \), the diagonal just above \( C \),
the right-hand side \( D \) (where \( p = 1, \ldots, n \) and \( r = 1, \ldots, n - 1 \))
and the matrix order \( n \). The solution vector replaces
the input vector \( D \) and the vector \( B \) is also destroyed in the
process ;

begin
real w ; integer j ;
for j := 2 step 1 until n do
      Dj[j] := (D[j] - A[j - 1] \times Dj[j - 1])/w end ;
for j := 1 step 1 until n - 1 do
end TRIDAG

\footnote{D. W. PEACEMAN and H. H. RACHFORD, JR., The Numerical
Solution of Parabolic and Elliptic Differential Equations, Journal
of the Soc. for Ind. and Applied Math. Vol. 3 March 1955.}