1. QUADI

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comment     QuadI is useful when integration of several functions of same limits at same time using same
            point rule is desired. The interval (a,b) is divided into m equal subintervals for an n-point
            quadrature integration. p is the number of functions to be integrated. w_k and u_k are normalized
            weights and abscissas respectively, where k=1,2,3,···,n. u_k must be in ascending order.
            P(B,j) =: (c) is a procedure which must be supplied by the programmer. It evaluates (c) the
            function (as indicated by j) for B. I_j is the result of integration for function j.;
procedure   QuadI (a,b,m,n,p,w_k,u_k,P(B,j) =: (c)) =: (Ij)
            begin
QuadI:              h := (b−a)/m
            for     j := 1(1)p  ;  I_j := 0
                    A := a−h/2
            for     i := 1(1)m
L1          begin   A := A+h
            for     k := 1(1)n
L2          begin   B := A+(h/2)×u_k
            for     j := 1(1)p
L3:         begin   P(B,j) =: (c)
                    I_j := I_j+w_k×c    end L3  ;  end L2
                  end L1
            for     j := 1(1)p
                    I_j := (h/2)×I_j
            return
            integer (j,k,i)
            end     QuadI
```