11. Evaluation of the Hermite Polynomial $H_n(X)$ by Recursion

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comment        This procedure computes the Hermite polynomial
               Hn(X) = (-1)^n × e^X^2 × (d^n/dX^n(e^-X^2)) for any
               given real argument, X, and any order, n, by
               the recursion formula below;
real procedure He(n, X) ;
integer        n ; real X ;
begin real     a, b, c ; integer i ;
               a := 1 ; b := 2X
               if n = 0 then c := a else if n = 1 then
               c := b else for i := 1 step 1 until n-1 do
               begin c := 2 × X × b - 2 × i × a ;
                     a := b ; b := c
               end
               He := c
               end
```