

ALGORITHM 36
TCHEBYCHEFF

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```
procedure tchebycheff (t, x, m,  $\ell$ ) ;
real array t, x ; integer  $\ell$ , m ;
comment given a set of m+1 values of x stored in a one-
dimensional array whose subscripts run from 0
thru m at least, construct a table of  $t_n(x)$ ,  $n =$ 
0, 1,  $\dots, \ell$  and store it in the two-dimensional
array t, where you find  $t_n(x[m])$  as t[n, m] ;
begin integer i, k, n ;
  for k := 0 step 1 until m do begin t[0, k] := 1 ;
  t[1, k] := x[k] end ;
  for n := 2 step 1 until  $\ell$  do for i = 0 step 1
  until m do
    t[n, i] := 2  $\times$  x[i]  $\times$  t[n - 1, i] - t[n - 2, i]
end tcheby
```