showtime: **true**$

file_search_maxima : **cons**(**sconcat**(**"C:/Users/lenovo/OneDrive/Desktop/Aims document**

load(**"retode"**);

1 Example 1

We consider the three term recurrence relation satisfied by the polynomials (7) in Daniel D. Tcheutia and Wolfram Koepf. Properties of some finite families of classical orthogonal polynomials.

Mnpq: $((-p+2 \cdot n+2) \cdot (-p+n+2)) \cdot P[n+2] + ((2 \cdot n-p+3) \cdot (4 \cdot n^2 \cdot x - 4 \cdot n \cdot p \cdot x + p^2 \cdot x + 2 \cdot n^2$
$+ ((q + n+1) \cdot (n+1) \cdot (2 \cdot n-p+4) \cdot (n-p-q+1)) \cdot P[n] = 0$;

REtoDE(**Mnpq**, **P[n]**, **x**);

2 Example 3

Example 4 from article: Wolfram Koepf and Dieter Schmersau. Recurrence equations and their classical orthogonal polynomial solutions.

RE: $((n+2+\text{alpha}) \cdot (2+n) \cdot (2 \cdot n+2) \cdot (n-N+1)) \cdot p[n+2] + ((3+2 \cdot n) \cdot (-6 \cdot n \cdot \text{alpha} - 2 \cdot n^2 \cdot \text{alpha}$
$- ((1+n) \cdot (n + 1-\text{alpha}) \cdot (2 \cdot n+4) \cdot (n+N+2)) \cdot p[n] = 0$;

REtoDiscrete(**RE**, **p[n]**, **x**);