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>  #  R. Gilmore
>  #  The generating function for Laguerre polynomials is Taylor
expanded,
>  #  truncated at some finite order, and converted to a polynomial.
>  #  The succesive derivatives are taken and evaluated at t=0.
>  #  The results are printed as the successive Laguerre polynomials.
>  #restart;
>  GenLag:=exp(-x*t/(1-t))/(1-t);
```

$$GenLag := e^{-\frac{xt}{1-t}} \left(1 - t\right)^{-1}$$

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>  nn:=10;
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$$nn := 10$$

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>  gg:=GenLag:Lag[0]:=subs(t=0,gg):print(0,Lag[0]);for i from 1
to nn do gg:=diff(gg,t):Lag[i]:=subs(t=0,gg):print(i,Lag[i]):od:
```

$0, 1$

$1, -x + 1$

$2, -4\,x + x^2 + 2$

$3, -18\,x + 9\,x^2 - x^3 + 6$

$4, -96\,x + 72\,x^2 - 16\,x^3 + x^4 + 24$

$5, -600\,x + 600\,x^2 - 200\,x^3 + 25\,x^4 - x^5 + 120$

$6, -4320\,x + 5400\,x^2 - 2400\,x^3 + 450\,x^4 - 36\,x^5 + x^6 + 720$

$7, -35280\,x + 52920\,x^2 - 29400\,x^3 + 7350\,x^4 - 882\,x^5 + 49\,x^6 - x^7 + 5040$

$8, -322560\,x + 564480\,x^2 - 376320\,x^3 + 117600\,x^4 - 18816\,x^5 + 1568\,x^6 - 64\,x^7 + x^8 + 40320$

$9, -3265920\,x + 6531840\,x^2 - 5080320\,x^3 + 1905120\,x^4 - 381024\,x^5 + 42336\,x^6 - 2592\,x^7 + 81\,x^8 - x^9 + 362880$

$10, -36288000\,x + 81648000\,x^2 - 72576000\,x^3 + 31752000\,x^4 - 7620480\,x^5 + 1058400\,x^6 - 86400\,x^7 + 4050\,x^8 - 100\,x^9 + x^{10} + 3628800$