```
> # Set the parameters and functions
  a := 'a':
  b := 'b':
  t := 't':
  m := 'm':
  U := (-18 + 9 m) u^7 + (30 a^2 + 64 - 72 m - 15 b^2 m - 108 b + 54 m a) u^6 + (
       -24 b^4 + 384 a - 36 m b^3 + 12 a^4 m + 72 a^3 - 270 b^2 - 432 m b + 255 a^2 m) u^5
       + (-b^6 m + 468 m a^3 - 36 b^5 - 1080 b^2 m + 960 a^2 + 112 a^4 - 120 b^4 m + 18 a^5 m
       + 2 a^6 - 232 b^3) u^4 + (-1440 m b^3 + 128 a^5 + 114 a^4 + 327 a^4 m + 1280 a^3
       - 12 b^6 + 14 a^6 m - 144 b^5 m) u^3 + (-45 b^6 m + 54 a^5 m - 1080 b^4 m + 58 a^6
       + 276 a^5 + 960 a^4) u^2 + (-432 b^5 m - 15 b^6 m + 384 a^5 + 110 a^6) u + 64 a^6
       - 72 b^6 m:

  U1 := Array(1..2):

  For 'i'= 0, 1 ... 27;
   for i from 0 by 1 to 27 do:
  a := 4106/1000 + (i + 1)/28 · (4108/1000 - 4106/1000):
  b := 4106/1000 + i/28 · (4108/1000 - 4106/1000):
  u := 57/10:
  m := 1919/1000:
  U1[1] := U:
   m := 195/100:
  U1[2] := U:

   print(['a'[i],'a'[i + 1],'U'(5.7,'a'[i + 1],'a'[i], 1.919), 'U'(5.7,'a'[i + 1],'a'[i], 1.95)]
       = [evalf(b, 6), evalf(a, 6), evalf(U1[1]), evalf(U1[2])]):
  end do:

  print():
  For 'i'= 28, 29 ... 52;
   for i from 28 by 1 to 52 do:
```

$a := \frac{4108}{1000} + \frac{\mathrm{i} - 27}{25} \cdot \left(\frac{4124}{1000} - \frac{4108}{1000} \right) :$

$b := \frac{4108}{1000} + \frac{i - 28}{25} \cdot \left(\frac{4124}{1000} - \frac{4108}{1000} \right) :$

$\mathrm{u} := \frac{55}{10} :$

$m := \frac{1919}{1000} :$

$U1[1] := U :$

$m := \frac{195}{100} :$

$U1[2] := U :$

$print(['\mathrm{a}'[i],'\mathrm{a}'[i+1],'U'(5.5,'\mathrm{a}'[i+1],'a'[i], 1.919), 'U'(5.5,'\mathrm{a}'[i+1],'a'[i], 1.95)]$
$= [evalf(\mathrm{b}, 6), evalf(a, 6), evalf(U1[1]), evalf(U1[2])]) :$

end do:

$print( ) :$

For 'i'= 53, 54 ... 74;

for i **from** 53 **by** 1 **to** 74 **do**:

$a := \frac{4124}{1000} + \frac{\mathrm{i} - 52}{22} \cdot \left(\frac{417}{100} - \frac{4124}{1000} \right) :$

$b := \frac{4124}{1000} + \frac{i - 53}{22} \cdot \left(\frac{417}{100} - \frac{4124}{1000} \right) :$

$u := \frac{51}{10} :$

$m := \frac{1919}{1000} :$

$U1[1] := U :$

$m := \frac{195}{100} :$

$U1[2] := U :$

 # show the final results

$print(['\mathrm{a}'[i],'\mathrm{a}'[i+1],'U'(5.1,'\mathrm{a}'[i+1],'a'[i], 1.919), 'U'(5.1,'\mathrm{a}'[i+1],'a'[i], 1.95)]$
$= [evalf(\mathrm{b}, 6), evalf(a, 6), evalf(U1[1]), evalf(U1[2])]) :$

end do:

For i = 0, 1 ..27

$$\left[a_0, a_1, U\left(5.7, a_1, a_0, 1.919\right), U\left(5.7, a_1, a_0, 1.95\right)\right] = \left[4.10600, 4.10607, -4991.700235, -7.323938042\ 10^5\right]$$

$$\left[a_1, a_2, U\left(5.7, a_2, a_1, 1.919\right), U\left(5.7, a_2, a_1, 1.95\right)\right] = \left[4.10607, 4.10614, -4852.023483, -7.323021661\ 10^5\right]$$

$$\left[a_2, a_3, U\left(5.7, a_3, a_2, 1.919\right), U\left(5.7, a_3, a_2, 1.95\right)\right] = \left[4.10614, 4.10621, -4712.354553, -7.322105387\ 10^5\right]$$

$$\left[a_3, a_4, U\left(5.7, a_4, a_3, 1.919\right), U\left(5.7, a_4, a_3, 1.95\right)\right] = \left[4.10621, 4.10629, -4572.693445, -7.321189220\ 10^5\right]$$

$$\left[a_4, a_5, U\left(5.7, a_5, a_4, 1.919\right), U\left(5.7, a_5, a_4, 1.95\right)\right] = \left[4.10629, 4.10636, -4433.040160, -7.320273159\ 10^5\right]$$

$$\left[a_5, a_6, U\left(5.7, a_6, a_5, 1.919\right), U\left(5.7, a_6, a_5, 1.95\right)\right] = \left[4.10636, 4.10643, -4293.394697, -7.319357206\ 10^5\right]$$

$$\left[a_6, a_7, U\left(5.7, a_7, a_6, 1.919\right), U\left(5.7, a_7, a_6, 1.95\right)\right] = \left[4.10643, 4.10650, -4153.757057, -7.318441359\ 10^5\right]$$

$$\left[a_7, a_8, U\left(5.7, a_8, a_7, 1.919\right), U\left(5.7, a_8, a_7, 1.95\right)\right] = \left[4.10650, 4.10657, -4014.127240, -7.317525619\ 10^5\right]$$

$$\left[a_8, a_9, U\left(5.7, a_9, a_8, 1.919\right), U\left(5.7, a_9, a_8, 1.95\right)\right] = \left[4.10657, 4.10664, -3874.505247, -7.316609987\ 10^5\right]$$

$$\left[a_9, a_{10}, U\left(5.7, a_{10}, a_9, 1.919\right), U\left(5.7, a_{10}, a_9, 1.95\right)\right] = \left[4.10664, 4.10671, -3734.891076, -7.315694461\ 10^5\right]$$

$$\left[a_{10}, a_{11}, U\left(5.7, a_{11}, a_{10}, 1.919\right), U\left(5.7, a_{11}, a_{10}, 1.95\right)\right] = \left[4.10671, 4.10679, -3595.284730, -7.314779042\ 10^5\right]$$

$$\left[a_{11}, a_{12}, U\left(5.7, a_{12}, a_{11}, 1.919\right), U\left(5.7, a_{12}, a_{11}, 1.95\right)\right] = \left[4.10679, 4.10686, -3455.686207, -7.313863730\ 10^5\right]$$

$$\left[a_{12}, a_{13}, U\left(5.7, a_{13}, a_{12}, 1.919\right), U\left(5.7, a_{13}, a_{12}, 1.95\right)\right] = \left[4.10686, 4.10693, -3316.095508, -7.312948525\ 10^5\right]$$

$$\left[a_{13}, a_{14}, U\left(5.7, a_{14}, a_{13}, 1.919\right), U\left(5.7, a_{14}, a_{13}, 1.95\right)\right] = \left[4.10693, 4.10700, -3176.512633, -7.312033427\ 10^5\right]$$

$$\left[a_{14}, a_{15}, U\left(5.7, a_{15}, a_{14}, 1.919\right), U\left(5.7, a_{15}, a_{14}, 1.95\right)\right] = \left[4.10700, 4.10707, -3036.937583, -7.311118436\ 10^5\right]$$

$$\left[a_{15}, a_{16}, U\left(5.7, a_{16}, a_{15}, 1.919\right), U\left(5.7, a_{16}, a_{15}, 1.95\right)\right] = \left[4.10707, 4.10714, -2897.370357, -7.310203551\ 10^5\right]$$

$$\left[a_{16}, a_{17}, U\left(5.7, a_{17}, a_{16}, 1.919\right), U\left(5.7, a_{17}, a_{16}, 1.95\right)\right] = \left[4.10714, 4.10721, -2757.810956, -7.309288774\ 10^5\right]$$

$$\left[a_{17}, a_{18}, U\left(5.7, a_{18}, a_{17}, 1.919\right), U\left(5.7, a_{18}, a_{17}, 1.95\right)\right] = \left[4.10721, 4.10729, -2618.259379, -7.308374104\ 10^5\right]$$

$$\left[a_{18}, a_{19}, U\left(5.7, a_{19}, a_{18}, 1.919\right), U\left(5.7, a_{19}, a_{18}, 1.95\right)\right] = \left[4.10729, 4.10736, -2478.715628, -7.307459541\ 10^5\right]$$

$$\left[a_{19}, a_{20}, U\left(5.7, a_{20}, a_{19}, 1.919\right), U\left(5.7, a_{20}, a_{19}, 1.95\right)\right] = \left[4.10736, 4.10743, -2339.179702, -7.306545084\ 10^5\right]$$

$$\left[a_{20}, a_{21}, U\left(5.7, a_{21}, a_{20}, 1.919\right), U\left(5.7, a_{21}, a_{20}, 1.95\right)\right] = \left[4.10743, 4.10750, -2199.651601, -7.305630735\ 10^5\right]$$

$$\left[a_{21}, a_{22}, U\left(5.7, a_{22}, a_{21}, 1.919\right), U\left(5.7, a_{22}, a_{21}, 1.95\right)\right] = \left[4.10750, 4.10757, -2060.131326, -7.304716492\ 10^5\right]$$

$$\left[a_{22}, a_{23}, U\left(5.7, a_{23}, a_{22}, 1.919\right), U\left(5.7, a_{23}, a_{22}, 1.95\right)\right] = \left[4.10757, 4.10764, -1920.618876, -7.303802357\ 10^5\right]$$

$$\left[a_{23}, a_{24}, U\left(5.7, a_{24}, a_{23}, 1.919\right), U\left(5.7, a_{24}, a_{23}, 1.95\right)\right] = \left[4.10764, 4.10771, -1781.114253, -7.302888329\ 10^5\right]$$

$$\left[a_{24}, a_{25}, U\left(5.7, a_{25}, a_{24}, 1.919\right), U\left(5.7, a_{25}, a_{24}, 1.95\right)\right] = \left[4.10771, 4.10779, -1641.617455, -7.301974407\ 10^5\right]$$

$$\left[a_{25}, a_{26}, U\left(5.7, a_{26}, a_{25}, 1.919\right), U\left(5.7, a_{26}, a_{25}, 1.95\right)\right] = \left[4.10779, 4.10786, -1502.128484, -7.301060593\ 10^5\right]$$

$$\left[a_{26}, a_{27}, U\left(5.7, a_{27}, a_{26}, 1.919\right), U\left(5.7, a_{27}, a_{26}, 1.95\right)\right] = \left[4.10786, 4.10793, -1362.647340, -7.300146885\ 10^5\right]$$

$$\left[a_{27}, a_{28}, U\left(5.7, a_{28}, a_{27}, 1.919\right), U\left(5.7, a_{28}, a_{27}, 1.95\right)\right] = \left[4.10793, 4.10800, -1223.174022, -7.299233284\ 10^5\right]$$

For i = 28, 29 ..52

$$\left[a_{28}, a_{29}, U\left(5.5, a_{29}, a_{28}, 1.919\right), U\left(5.5, a_{29}, a_{28}, 1.95\right)\right] = \left[4.10800, 4.10864, -63435.76510, -7.718190094\ 10^5\right]$$

$$[a_{29}, a_{30}, U(5.5, a_{30}, a_{29}, 1.919), U(5.5, a_{30}, a_{29}, 1.95)] = [4.10864, 4.10928, -62335.60754, -7.711423801\ 10^5]$$
$$[a_{30}, a_{31}, U(5.5, a_{31}, a_{30}, 1.919), U(5.5, a_{31}, a_{30}, 1.95)] = [4.10928, 4.10992, -61235.86024, -7.704663885\ 10^5]$$
$$[a_{31}, a_{32}, U(5.5, a_{32}, a_{31}, 1.919), U(5.5, a_{32}, a_{31}, 1.95)] = [4.10992, 4.11056, -60136.52319, -7.697910346\ 10^5]$$
$$[a_{32}, a_{33}, U(5.5, a_{33}, a_{32}, 1.919), U(5.5, a_{33}, a_{32}, 1.95)] = [4.11056, 4.11120, -59037.59639, -7.691163187\ 10^5]$$
$$[a_{33}, a_{34}, U(5.5, a_{34}, a_{33}, 1.919), U(5.5, a_{34}, a_{33}, 1.95)] = [4.11120, 4.11184, -57939.07986, -7.684422408\ 10^5]$$
$$[a_{34}, a_{35}, U(5.5, a_{35}, a_{34}, 1.919), U(5.5, a_{35}, a_{34}, 1.95)] = [4.11184, 4.11248, -56840.97358, -7.677688010\ 10^5]$$
$$[a_{35}, a_{36}, U(5.5, a_{36}, a_{35}, 1.919), U(5.5, a_{36}, a_{35}, 1.95)] = [4.11248, 4.11312, -55743.27757, -7.670959994\ 10^5]$$
$$[a_{36}, a_{37}, U(5.5, a_{37}, a_{36}, 1.919), U(5.5, a_{37}, a_{36}, 1.95)] = [4.11312, 4.11376, -54645.99183, -7.664238361\ 10^5]$$
$$[a_{37}, a_{38}, U(5.5, a_{38}, a_{37}, 1.919), U(5.5, a_{38}, a_{37}, 1.95)] = [4.11376, 4.11440, -53549.11634, -7.657523112\ 10^5]$$
$$[a_{38}, a_{39}, U(5.5, a_{39}, a_{38}, 1.919), U(5.5, a_{39}, a_{38}, 1.95)] = [4.11440, 4.11504, -52452.65112, -7.650814247\ 10^5]$$
$$[a_{39}, a_{40}, U(5.5, a_{40}, a_{39}, 1.919), U(5.5, a_{40}, a_{39}, 1.95)] = [4.11504, 4.11568, -51356.59616, -7.644111769\ 10^5]$$
$$[a_{40}, a_{41}, U(5.5, a_{41}, a_{40}, 1.919), U(5.5, a_{41}, a_{40}, 1.95)] = [4.11568, 4.11632, -50260.95146, -7.637415677\ 10^5]$$
$$[a_{41}, a_{42}, U(5.5, a_{42}, a_{41}, 1.919), U(5.5, a_{42}, a_{41}, 1.95)] = [4.11632, 4.11696, -49165.71702, -7.630725973\ 10^5]$$
$$[a_{42}, a_{43}, U(5.5, a_{43}, a_{42}, 1.919), U(5.5, a_{43}, a_{42}, 1.95)] = [4.11696, 4.11760, -48070.89284, -7.624042658\ 10^5]$$
$$[a_{43}, a_{44}, U(5.5, a_{44}, a_{43}, 1.919), U(5.5, a_{44}, a_{43}, 1.95)] = [4.11760, 4.11824, -46976.47890, -7.617365732\ 10^5]$$
$$[a_{44}, a_{45}, U(5.5, a_{45}, a_{44}, 1.919), U(5.5, a_{45}, a_{44}, 1.95)] = [4.11824, 4.11888, -45882.47521, -7.610695197\ 10^5]$$
$$[a_{45}, a_{46}, U(5.5, a_{46}, a_{45}, 1.919), U(5.5, a_{46}, a_{45}, 1.95)] = [4.11888, 4.11952, -44788.88176, -7.604031053\ 10^5]$$
$$[a_{46}, a_{47}, U(5.5, a_{47}, a_{46}, 1.919), U(5.5, a_{47}, a_{46}, 1.95)] = [4.11952, 4.12016, -43695.69855, -7.597373302\ 10^5]$$
$$[a_{47}, a_{48}, U(5.5, a_{48}, a_{47}, 1.919), U(5.5, a_{48}, a_{47}, 1.95)] = [4.12016, 4.12080, -42602.92557, -7.590721944\ 10^5]$$
$$[a_{48}, a_{49}, U(5.5, a_{49}, a_{48}, 1.919), U(5.5, a_{49}, a_{48}, 1.95)] = [4.12080, 4.12144, -41510.56281, -7.584076980\ 10^5]$$
$$[a_{49}, a_{50}, U(5.5, a_{50}, a_{49}, 1.919), U(5.5, a_{50}, a_{49}, 1.95)] = [4.12144, 4.12208, -40418.61027, -7.577438411\ 10^5]$$
$$[a_{50}, a_{51}, U(5.5, a_{51}, a_{50}, 1.919), U(5.5, a_{51}, a_{50}, 1.95)] = [4.12208, 4.12272, -39327.06794, -7.570806238\ 10^5]$$
$$[a_{51}, a_{52}, U(5.5, a_{52}, a_{51}, 1.919), U(5.5, a_{52}, a_{51}, 1.95)] = [4.12272, 4.12336, -38235.93581, -7.564180462\ 10^5]$$
$$[a_{52}, a_{53}, U(5.5, a_{53}, a_{52}, 1.919), U(5.5, a_{53}, a_{52}, 1.95)] = [4.12336, 4.12400, -37145.21386, -7.557561083\ 10^5]$$

For i = 53, 54 ..74

$$[a_{53}, a_{54}, U(5.1, a_{54}, a_{53}, 1.919), U(5.1, a_{54}, a_{53}, 1.95)] = [4.12400, 4.12609, -78594.60556, -7.404628534\ 10^5]$$
$$[a_{54}, a_{55}, U(5.1, a_{55}, a_{54}, 1.919), U(5.1, a_{55}, a_{54}, 1.95)] = [4.12609, 4.12818, -75685.92798, -7.388723039\ 10^5]$$
$$[a_{55}, a_{56}, U(5.1, a_{56}, a_{55}, 1.919), U(5.1, a_{56}, a_{55}, 1.95)] = [4.12818, 4.13027, -72777.85094, -7.372846818\ 10^5]$$
$$[a_{56}, a_{57}, U(5.1, a_{57}, a_{56}, 1.919), U(5.1, a_{57}, a_{56}, 1.95)] = [4.13027, 4.13236, -69870.36749, -7.356999834\ 10^5]$$
$$[a_{57}, a_{58}, U(5.1, a_{58}, a_{57}, 1.919), U(5.1, a_{58}, a_{57}, 1.95)] = [4.13236, 4.13445, -66963.47063, -7.341182050\ 10^5]$$
$$[a_{58}, a_{59}, U(5.1, a_{59}, a_{58}, 1.919), U(5.1, a_{59}, a_{58}, 1.95)] = [4.13445, 4.13655, -64057.15330, -7.325393428\ 10^5]$$

$$[a_{59}, a_{60}, U(5.1, a_{60}, a_{59}, 1.919), U(5.1, a_{60}, a_{59}, 1.95)] = [4.13655, 4.13864, -61151.40838, -7.309633929\ 10^5]$$

$$[a_{60}, a_{61}, U(5.1, a_{61}, a_{60}, 1.919), U(5.1, a_{61}, a_{60}, 1.95)] = [4.13864, 4.14073, -58246.22867, -7.293903513\ 10^5]$$

$$[a_{61}, a_{62}, U(5.1, a_{62}, a_{61}, 1.919), U(5.1, a_{62}, a_{61}, 1.95)] = [4.14073, 4.14282, -55341.60694, -7.278202140\ 10^5]$$

$$[a_{62}, a_{63}, U(5.1, a_{63}, a_{62}, 1.919), U(5.1, a_{63}, a_{62}, 1.95)] = [4.14282, 4.14491, -52437.53585, -7.262529770\ 10^5]$$

$$[a_{63}, a_{64}, U(5.1, a_{64}, a_{63}, 1.919), U(5.1, a_{64}, a_{63}, 1.95)] = [4.14491, 4.14700, -49534.00804, -7.246886363\ 10^5]$$

$$[a_{64}, a_{65}, U(5.1, a_{65}, a_{64}, 1.919), U(5.1, a_{65}, a_{64}, 1.95)] = [4.14700, 4.14909, -46631.01607, -7.231271875\ 10^5]$$

$$[a_{65}, a_{66}, U(5.1, a_{66}, a_{65}, 1.919), U(5.1, a_{66}, a_{65}, 1.95)] = [4.14909, 4.15118, -43728.55243, -7.215686265\ 10^5]$$

$$[a_{66}, a_{67}, U(5.1, a_{67}, a_{66}, 1.919), U(5.1, a_{67}, a_{66}, 1.95)] = [4.15118, 4.15327, -40826.60956, -7.200129490\ 10^5]$$

$$[a_{67}, a_{68}, U(5.1, a_{68}, a_{67}, 1.919), U(5.1, a_{68}, a_{67}, 1.95)] = [4.15327, 4.15536, -37925.17984, -7.184601506\ 10^5]$$

$$[a_{68}, a_{69}, U(5.1, a_{69}, a_{68}, 1.919), U(5.1, a_{69}, a_{68}, 1.95)] = [4.15536, 4.15745, -35024.25556, -7.169102269\ 10^5]$$

$$[a_{69}, a_{70}, U(5.1, a_{70}, a_{69}, 1.919), U(5.1, a_{70}, a_{69}, 1.95)] = [4.15745, 4.15955, -32123.82896, -7.153631734\ 10^5]$$

$$[a_{70}, a_{71}, U(5.1, a_{71}, a_{70}, 1.919), U(5.1, a_{71}, a_{70}, 1.95)] = [4.15955, 4.16164, -29223.89225, -7.138189857\ 10^5]$$

$$[a_{71}, a_{72}, U(5.1, a_{72}, a_{71}, 1.919), U(5.1, a_{72}, a_{71}, 1.95)] = [4.16164, 4.16373, -26324.43751, -7.122776591\ 10^5]$$

$$[a_{72}, a_{73}, U(5.1, a_{73}, a_{72}, 1.919), U(5.1, a_{73}, a_{72}, 1.95)] = [4.16373, 4.16582, -23425.45682, -7.107391889\ 10^5]$$

$$[a_{73}, a_{74}, U(5.1, a_{74}, a_{73}, 1.919), U(5.1, a_{74}, a_{73}, 1.95)] = [4.16582, 4.16791, -20526.94215, -7.092035704\ 10^5]$$

$$[a_{74}, a_{75}, U(5.1, a_{75}, a_{74}, 1.919), U(5.1, a_{75}, a_{74}, 1.95)] = [4.16791, 4.17000, -17628.88542, -7.076707989\ 10^5] \quad \textbf{(1)}$$

>