

```
with(plots);
[animate, animate3d, animatecurve, arrow, changecoords, complexplot, complexplot3d,
conformal, conformal3d, contourplot, contourplot3d, coordplot, coordplot3d, densityplot,
display, dualaxisplot, fieldplot, fieldplot3d, gradplot, gradplot3d, implicitplot, implicitplot3d,
inequal, interactive, interactiveparams, intersectplot, listcontplot, listcontplot3d,
listdensityplot, listplot, listplot3d, loglogplot, logplot, matrixplot, multiple, odeplot, pareto,
plotcompare, pointplot, pointplot3d, polarplot, polygonplot, polygonplot3d,
polyhedra_supported, polyhedraplot, rootlocus, semilogplot, setcolors, setoptions,
setoptions3d, shadebetween, spacecurve, sparsematrixplot, surfdata, textplot, textplot3d,
tubeplot]
```

(1)

```
f := x → 0.5 · x + 0.1;
x → 0.5 x + 0.1
```

(2)

```
f(0);
0.1
```

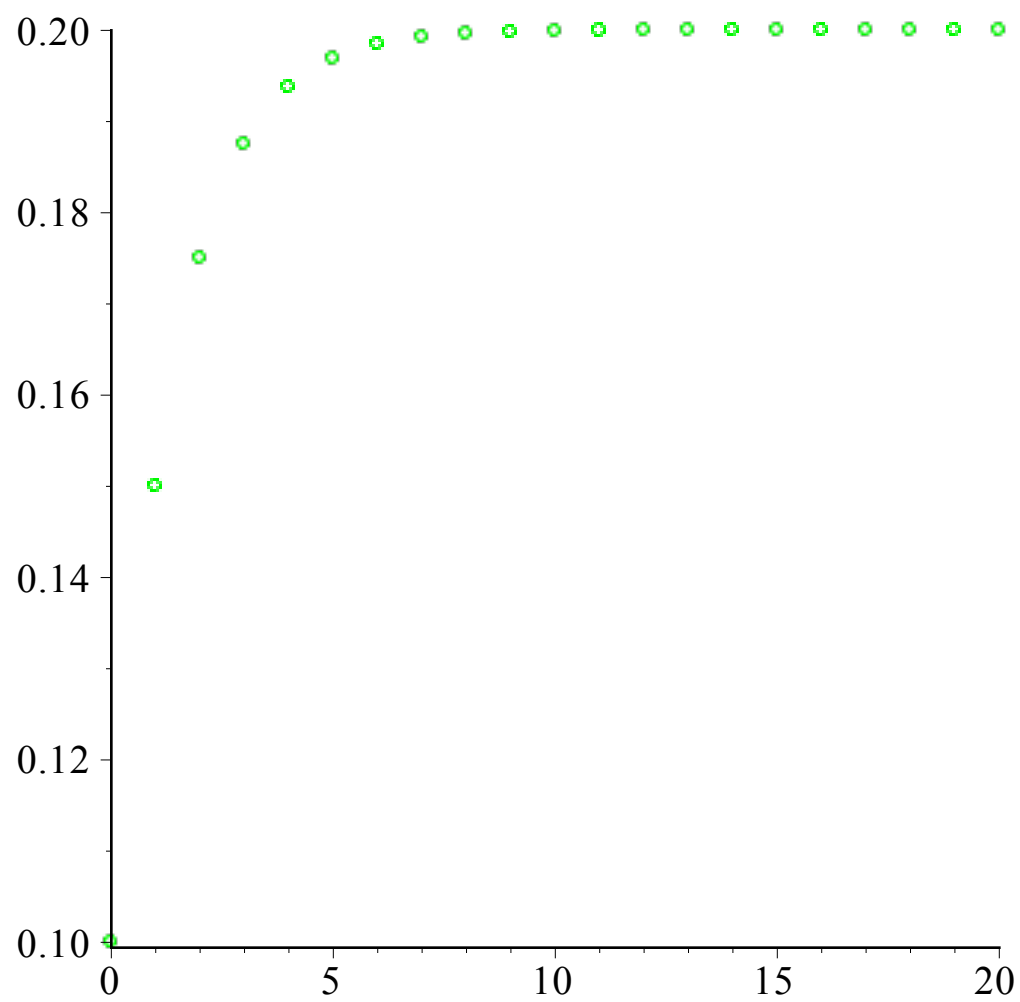
(3)

```
with( ColorTools );
[AddPalette, Adjust, AnalogousSpread, Color, ColorDescription, ColorsFromImage, Convert,
Darken, Desaturate, Distance, EvenSpread, ExpandPalette, GetColorNames, GetPalette,
Gradient, GraySpread, HSVColorWheel, HexToRGB24, HexToString, HueSplit, HueSpread,
KnownPalette, LCHColorWheel, Lighten, NameToRGB24, NearestNamedColor,
NeutralSpread, Palette, PaletteNames, PlotColorToRGB24, RGB24ToHex, RGB24ToName,
RGB24ToRGB, RGBGrid, RGBToRGB24, ReducePalette, RemovePalette, Saturate,
SortPalette, SpatterPlot, SpatterPlot3d, Swatches, ToDisplayable, ToRGB24,
WavelengthToColor]
```

(4)

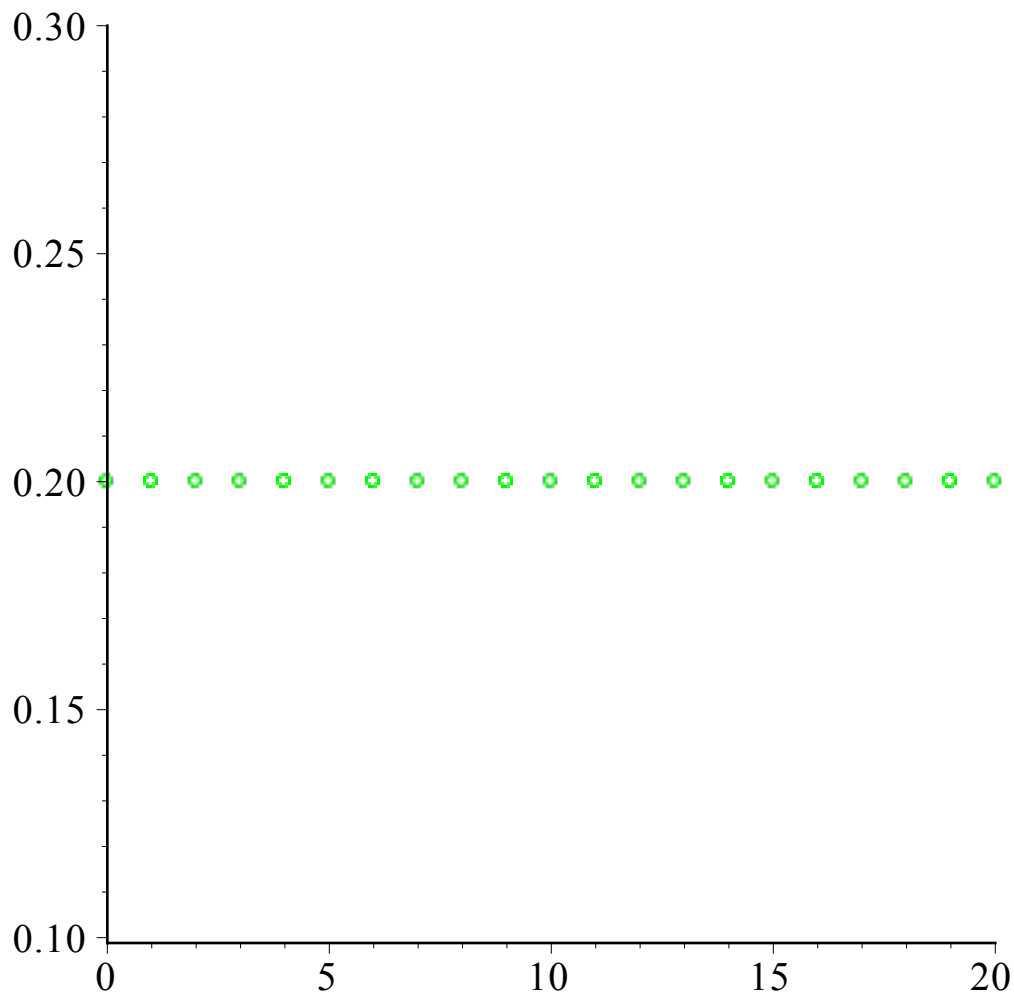
```
a := 0.1 :
pts := [0, a] :
print(0, a) :
for i from 1 to 20 do
  a := f(a) :
  pts := pts, [i, a] :
  print(i, a);
od:
plot([pts], style = point, symbol = circle, colour = green);
0, 0.1
1, 0.15
2, 0.175
3, 0.1875
4, 0.19375
5, 0.196875
6, 0.1984375
```

7, 0.19921875
8, 0.199609375
9, 0.1998046875
10, 0.1999023438
11, 0.1999511719
12, 0.1999755860
13, 0.1999877930
14, 0.1999938965
15, 0.1999969482
16, 0.1999984741
17, 0.1999992370
18, 0.1999996185
19, 0.1999998092
20, 0.1999999046



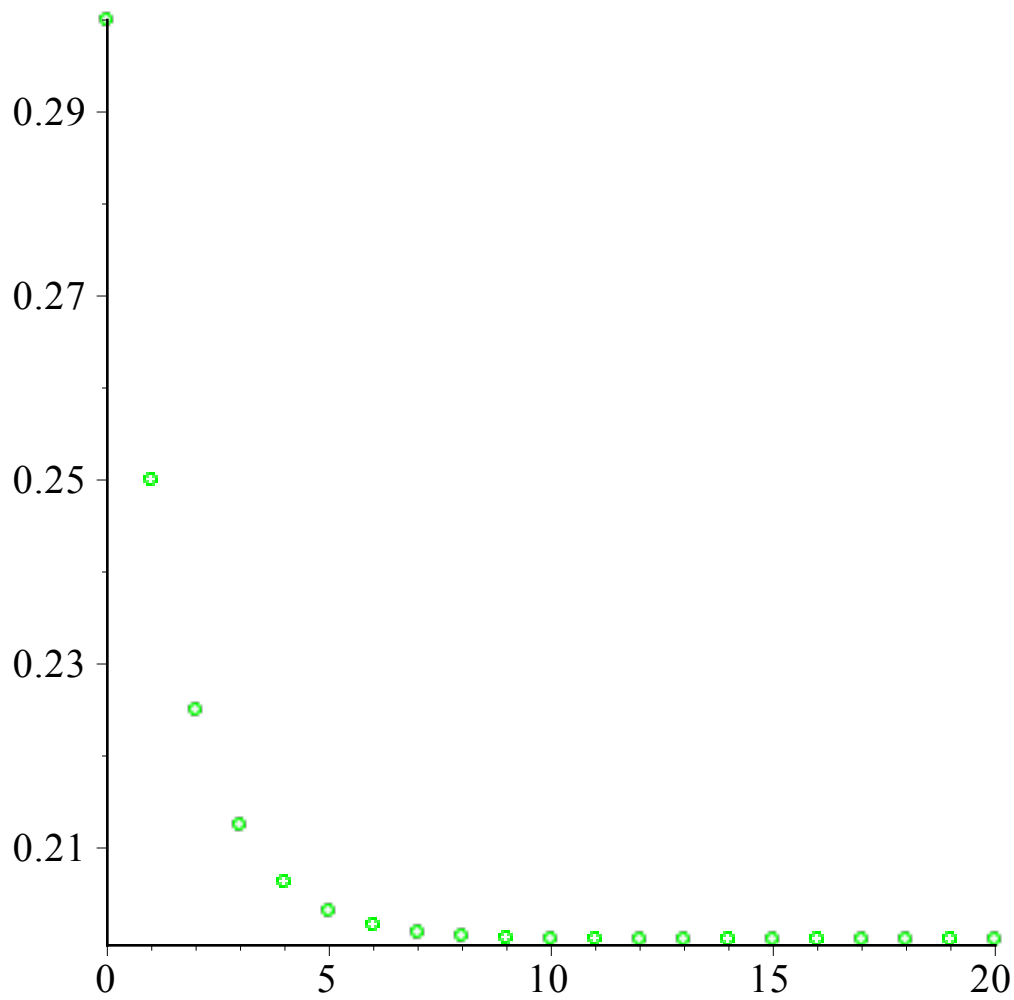
```
a := 0.2 :  
pts := [0, a] :  
print(0, a) :  
for i from 1 to 20 do  
  a := f(a) :  
  pts := pts, [i, a] :  
  print(i, a) ;  
od :  
plot( [pts ], style = point, symbol = circle, colour = green) ;
```

```
0, 0.2  
1, 0.20  
2, 0.200  
3, 0.2000  
4, 0.20000  
5, 0.200000  
6, 0.2000000  
7, 0.20000000  
8, 0.200000000  
9, 0.2000000000  
10, 0.2000000000  
11, 0.2000000000  
12, 0.2000000000  
13, 0.2000000000  
14, 0.2000000000  
15, 0.2000000000  
16, 0.2000000000  
17, 0.2000000000  
18, 0.2000000000  
19, 0.2000000000  
20, 0.2000000000
```



```
a := 0.3 :  
pts := [0, a] :  
print(0, a) :  
for i from 1 to 20 do  
  a := f(a) :  
  pts := pts, [i, a] :  
  print(i, a);  
od:  
plot([pts], style = point, symbol = circle, colour = green);  
0, 0.3  
1, 0.25  
2, 0.225  
3, 0.2125  
4, 0.20625  
5, 0.203125  
6, 0.2015625  
7, 0.20078125
```

8, 0.200390625
9, 0.2001953125
10, 0.2000976562
11, 0.2000488281
12, 0.2000244140
13, 0.2000122070
14, 0.2000061035
15, 0.2000030518
16, 0.2000015259
17, 0.2000007630
18, 0.2000003815
19, 0.2000001908
20, 0.2000000954



$f := x \rightarrow 1.01 \cdot x - 1000;$

$$x \rightarrow 1.01 x - 1000$$

(5)

```

a := 90000 :
pts := [0, a] :
print(0, a) :
for i from 1 to 100 do
  a := f(a) :
  pts := pts, [i, a] :
  print(i, a);
od:
plot([pts], style = point, symbol = circle, colour = brown);

```

0, 90000

1, 89900.00

2, 89799.0000

3, 89696.99000

4, 89593.95990

5, 89489.89950

6, 89384.79850

7, 89278.64648

8, 89171.43294

9, 89063.14727

10, 88953.77874

11, 88843.31653

12, 88731.74970

13, 88619.06720

14, 88505.25787

15, 88390.31045

16, 88274.21355

17, 88156.95569

18, 88038.52525

19, 87918.91050

20, 87798.09960

21, 87676.08060

22, 87552.84141

23, 87428.36982

24, 87302.65352

25, 87175.68006

26, 87047.43686

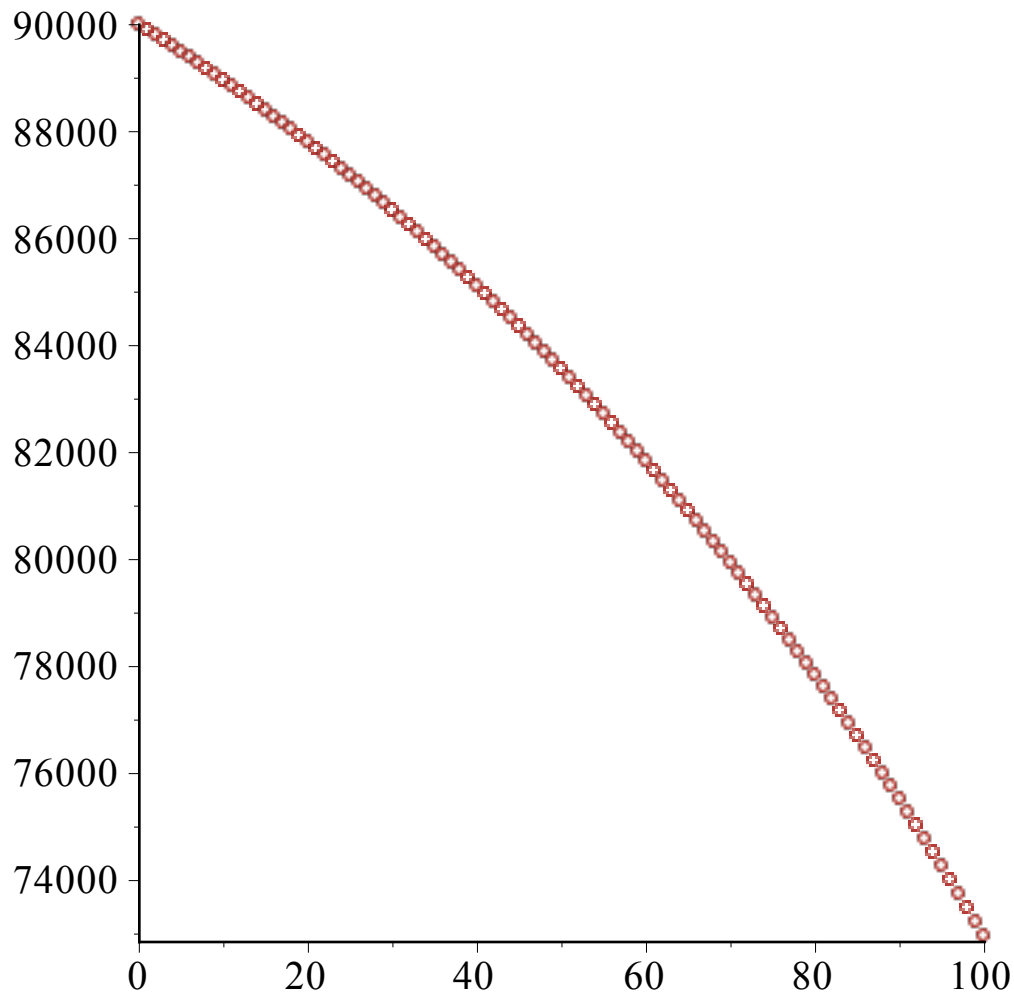
27, 86917.91123
28, 86787.09034
29, 86654.96124
30, 86521.51085
31, 86386.72596
32, 86250.59322
33, 86113.09915
34, 85974.23014
35, 85833.97244
36, 85692.31216
37, 85549.23528
38, 85404.72763
39, 85258.77491
40, 85111.36266
41, 84962.47629
42, 84812.10105
43, 84660.22206
44, 84506.82428
45, 84351.89252
46, 84195.41145
47, 84037.36556
48, 83877.73922
49, 83716.51661
50, 83553.68178
51, 83389.21860
52, 83223.11079
53, 83055.34190
54, 82885.89532
55, 82714.75427
56, 82541.90181
57, 82367.32083
58, 82190.99404
59, 82012.90398
60, 81833.03302

61, 81651.36335
62, 81467.87698
63, 81282.55575
64, 81095.38131
65, 80906.33512
66, 80715.39847
67, 80522.55245
68, 80327.77797
69, 80131.05575
70, 79932.36631
71, 79731.68997
72, 79529.00687
73, 79324.29694
74, 79117.53991
75, 78908.71531
76, 78697.80246
77, 78484.78048
78, 78269.62828
79, 78052.32456
80, 77832.84781
81, 77611.17629
82, 77387.28805
83, 77161.16093
84, 76932.77254
85, 76702.10027
86, 76469.12127
87, 76233.81248
88, 75996.15060
89, 75756.11211
90, 75513.67323
91, 75268.80996
92, 75021.49806
93, 74771.71304
94, 74519.43017


```

95, 74264.62447
96, 74007.27071
97, 73747.34342
98, 73484.81685
99, 73219.66502
100, 72951.86167

```



```

a := 100000 :
pts := [0, a] :
print(0, a) :
for i from 1 to 100 do
    a := f(a) :
    pts := pts, [i, a] :
    print(i, a);
od:
plot([pts], style = point, symbol = circle, colour = brown);
0, 100000

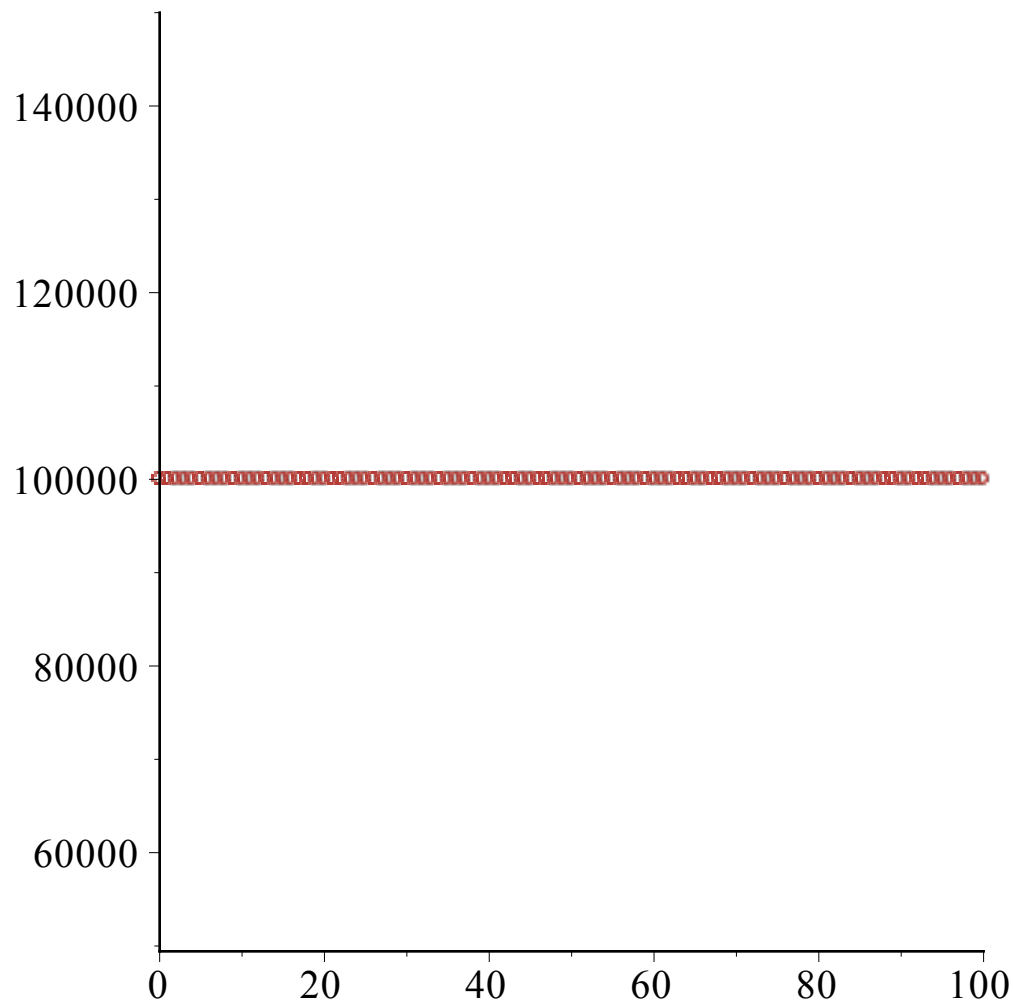
```

1, 1.00000000 10⁵
2, 1.000000000 10⁵
3, 1.000000000 10⁵
4, 1.000000000 10⁵
5, 1.000000000 10⁵
6, 1.000000000 10⁵
7, 1.000000000 10⁵
8, 1.000000000 10⁵
9, 1.000000000 10⁵
10, 1.000000000 10⁵
11, 1.000000000 10⁵
12, 1.000000000 10⁵
13, 1.000000000 10⁵
14, 1.000000000 10⁵
15, 1.000000000 10⁵
16, 1.000000000 10⁵
17, 1.000000000 10⁵
18, 1.000000000 10⁵
19, 1.000000000 10⁵
20, 1.000000000 10⁵
21, 1.000000000 10⁵
22, 1.000000000 10⁵
23, 1.000000000 10⁵
24, 1.000000000 10⁵
25, 1.000000000 10⁵
26, 1.000000000 10⁵
27, 1.000000000 10⁵
28, 1.000000000 10⁵
29, 1.000000000 10⁵
30, 1.000000000 10⁵

31, 1.000000000 10⁵
32, 1.000000000 10⁵
33, 1.000000000 10⁵
34, 1.000000000 10⁵
35, 1.000000000 10⁵
36, 1.000000000 10⁵
37, 1.000000000 10⁵
38, 1.000000000 10⁵
39, 1.000000000 10⁵
40, 1.000000000 10⁵
41, 1.000000000 10⁵
42, 1.000000000 10⁵
43, 1.000000000 10⁵
44, 1.000000000 10⁵
45, 1.000000000 10⁵
46, 1.000000000 10⁵
47, 1.000000000 10⁵
48, 1.000000000 10⁵
49, 1.000000000 10⁵
50, 1.000000000 10⁵
51, 1.000000000 10⁵
52, 1.000000000 10⁵
53, 1.000000000 10⁵
54, 1.000000000 10⁵
55, 1.000000000 10⁵
56, 1.000000000 10⁵
57, 1.000000000 10⁵
58, 1.000000000 10⁵
59, 1.000000000 10⁵
60, 1.000000000 10⁵

61, 1.000000000 10⁵
62, 1.000000000 10⁵
63, 1.000000000 10⁵
64, 1.000000000 10⁵
65, 1.000000000 10⁵
66, 1.000000000 10⁵
67, 1.000000000 10⁵
68, 1.000000000 10⁵
69, 1.000000000 10⁵
70, 1.000000000 10⁵
71, 1.000000000 10⁵
72, 1.000000000 10⁵
73, 1.000000000 10⁵
74, 1.000000000 10⁵
75, 1.000000000 10⁵
76, 1.000000000 10⁵
77, 1.000000000 10⁵
78, 1.000000000 10⁵
79, 1.000000000 10⁵
80, 1.000000000 10⁵
81, 1.000000000 10⁵
82, 1.000000000 10⁵
83, 1.000000000 10⁵
84, 1.000000000 10⁵
85, 1.000000000 10⁵
86, 1.000000000 10⁵
87, 1.000000000 10⁵
88, 1.000000000 10⁵
89, 1.000000000 10⁵
90, 1.000000000 10⁵

91, 1.0000000000 10⁵
92, 1.0000000000 10⁵
93, 1.0000000000 10⁵
94, 1.0000000000 10⁵
95, 1.0000000000 10⁵
96, 1.0000000000 10⁵
97, 1.0000000000 10⁵
98, 1.0000000000 10⁵
99, 1.0000000000 10⁵
100, 1.0000000000 10⁵



```
a := 110000 :  
pts := [0, a] :  
print(0, a) :
```

```
for  $i$  from 1 to 100 do  
   $a := f(a)$  :  
   $pts := pts, [i, a]$  :  
   $print(i, a)$ ;  
od:  
 $plot([pts], style = point, symbol = circle, colour = brown);$ 
```

0, 110000

1, 1.1010000 10^5

2, 1.102010000 10^5

3, 1.103030100 10^5

4, 1.104060401 10^5

5, 1.105101005 10^5

6, 1.106152015 10^5

7, 1.107213535 10^5

8, 1.108285670 10^5

9, 1.109368527 10^5

10, 1.110462212 10^5

11, 1.111566834 10^5

12, 1.112682502 10^5

13, 1.113809327 10^5

14, 1.114947420 10^5

15, 1.116096894 10^5

16, 1.117257863 10^5

17, 1.118430442 10^5

18, 1.119614746 10^5

19, 1.120810893 10^5

20, 1.122019002 10^5

21, 1.123239192 10^5

22, 1.124471584 10^5

23, 1.125716300 10^5

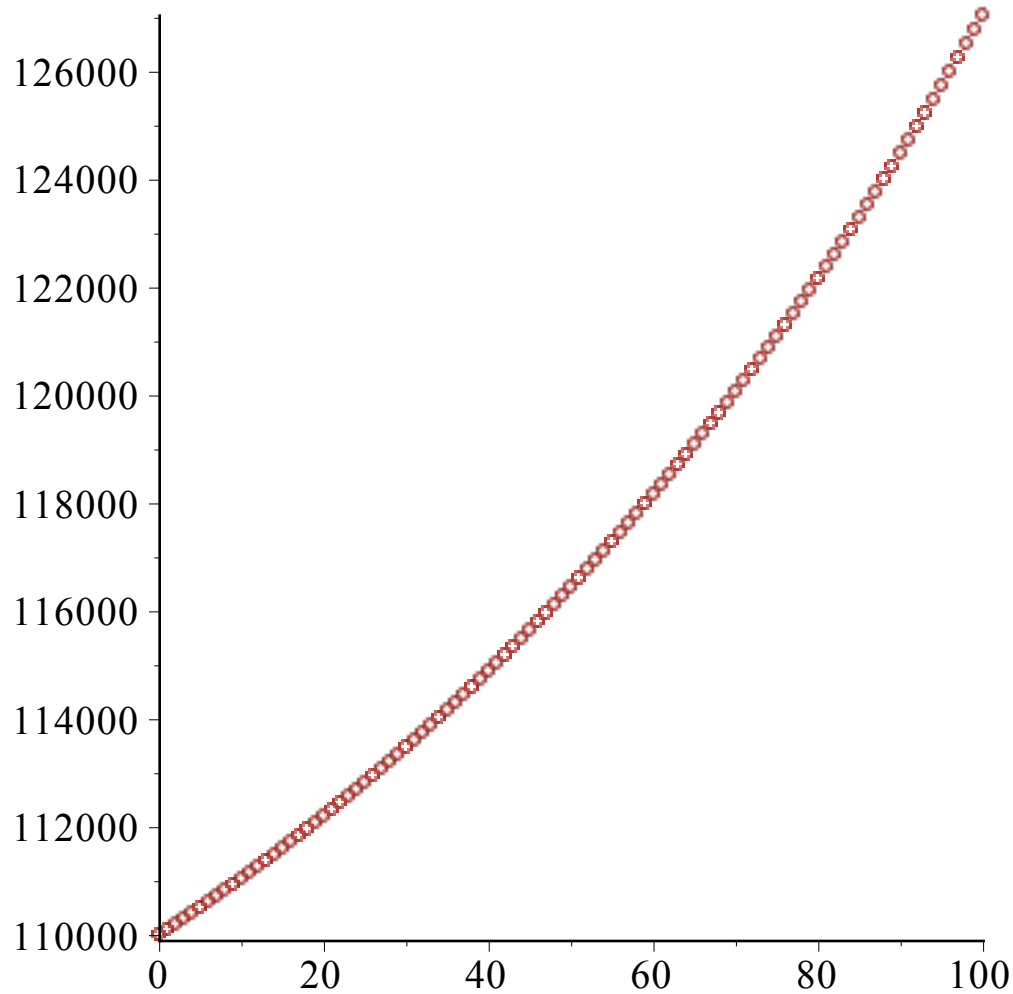
24, 1.126973463 10^5

25, 1.128243198 10^5

26, 1.129525630 10⁵
27, 1.130820886 10⁵
28, 1.132129095 10⁵
29, 1.133450386 10⁵
30, 1.134784890 10⁵
31, 1.136132739 10⁵
32, 1.137494066 10⁵
33, 1.138869007 10⁵
34, 1.140257697 10⁵
35, 1.141660274 10⁵
36, 1.143076877 10⁵
37, 1.144507646 10⁵
38, 1.145952722 10⁵
39, 1.147412249 10⁵
40, 1.148886371 10⁵
41, 1.150375235 10⁵
42, 1.151878987 10⁵
43, 1.153397777 10⁵
44, 1.154931755 10⁵
45, 1.156481073 10⁵
46, 1.158045884 10⁵
47, 1.159626343 10⁵
48, 1.161222606 10⁵
49, 1.162834832 10⁵
50, 1.164463180 10⁵
51, 1.166107812 10⁵
52, 1.167768890 10⁵
53, 1.169446579 10⁵
54, 1.171141045 10⁵
55, 1.172852455 10⁵

56, 1.174580980 10⁵
57, 1.176326790 10⁵
58, 1.178090058 10⁵
59, 1.179870959 10⁵
60, 1.181669669 10⁵
61, 1.183486366 10⁵
62, 1.185321230 10⁵
63, 1.187174442 10⁵
64, 1.189046186 10⁵
65, 1.190936648 10⁵
66, 1.192846014 10⁵
67, 1.194774474 10⁵
68, 1.196722219 10⁵
69, 1.198689441 10⁵
70, 1.200676335 10⁵
71, 1.202683098 10⁵
72, 1.204709929 10⁵
73, 1.206757028 10⁵
74, 1.208824598 10⁵
75, 1.210912844 10⁵
76, 1.213021972 10⁵
77, 1.215152192 10⁵
78, 1.217303714 10⁵
79, 1.219476751 10⁵
80, 1.221671519 10⁵
81, 1.223888234 10⁵
82, 1.226127116 10⁵
83, 1.228388387 10⁵
84, 1.230672271 10⁵
85, 1.232978994 10⁵

86, $1.235308784 \cdot 10^5$
87, $1.237661872 \cdot 10^5$
88, $1.240038491 \cdot 10^5$
89, $1.242438876 \cdot 10^5$
90, $1.244863265 \cdot 10^5$
91, $1.247311898 \cdot 10^5$
92, $1.249785017 \cdot 10^5$
93, $1.252282867 \cdot 10^5$
94, $1.254805696 \cdot 10^5$
95, $1.257353753 \cdot 10^5$
96, $1.259927291 \cdot 10^5$
97, $1.262526564 \cdot 10^5$
98, $1.265151830 \cdot 10^5$
99, $1.267803348 \cdot 10^5$
100, $1.270481381 \cdot 10^5$



```

a := 92000 :
pts := [0, a] :
print(0, a) :
for i from 1 to 240 do
    a := f(a) :
    pts := pts, [i, a] :
    print(i, a);
od:
plot([pts], style = point, symbol = circle, colour = brown);

```

```

0, 92000
1, 91920.00
2, 91839.2000
3, 91757.59200
4, 91675.16792
5, 91591.91960
6, 91507.83880
7, 91422.91719

```

8, 91337.14636
9, 91250.51782
10, 91163.02300
11, 91074.65323
12, 90985.39976
13, 90895.25376
14, 90804.20630
15, 90712.24836
16, 90619.37084
17, 90525.56455
18, 90430.82020
19, 90335.12840
20, 90238.47968
21, 90140.86448
22, 90042.27312
23, 89942.69585
24, 89842.12281
25, 89740.54404
26, 89637.94948
27, 89534.32897
28, 89429.67226
29, 89323.96898
30, 89217.20867
31, 89109.38076
32, 89000.47457
33, 88890.47932
34, 88779.38411
35, 88667.17795
36, 88553.84973
37, 88439.38823
38, 88323.78211
39, 88207.01993
40, 88089.09013
41, 87969.98103

42, 87849.68084
43, 87728.17765
44, 87605.45943
45, 87481.51402
46, 87356.32916
47, 87229.89245
48, 87102.19137
49, 86973.21328
50, 86842.94541
51, 86711.37486
52, 86578.48861
53, 86444.27350
54, 86308.71624
55, 86171.80340
56, 86033.52143
57, 85893.85664
58, 85752.79521
59, 85610.32316
60, 85466.42639
61, 85321.09065
62, 85174.30156
63, 85026.04458
64, 84876.30503
65, 84725.06808
66, 84572.31876
67, 84418.04195
68, 84262.22237
69, 84104.84459
70, 83945.89304
71, 83785.35197
72, 83623.20549
73, 83459.43754
74, 83294.03192
75, 83126.97224

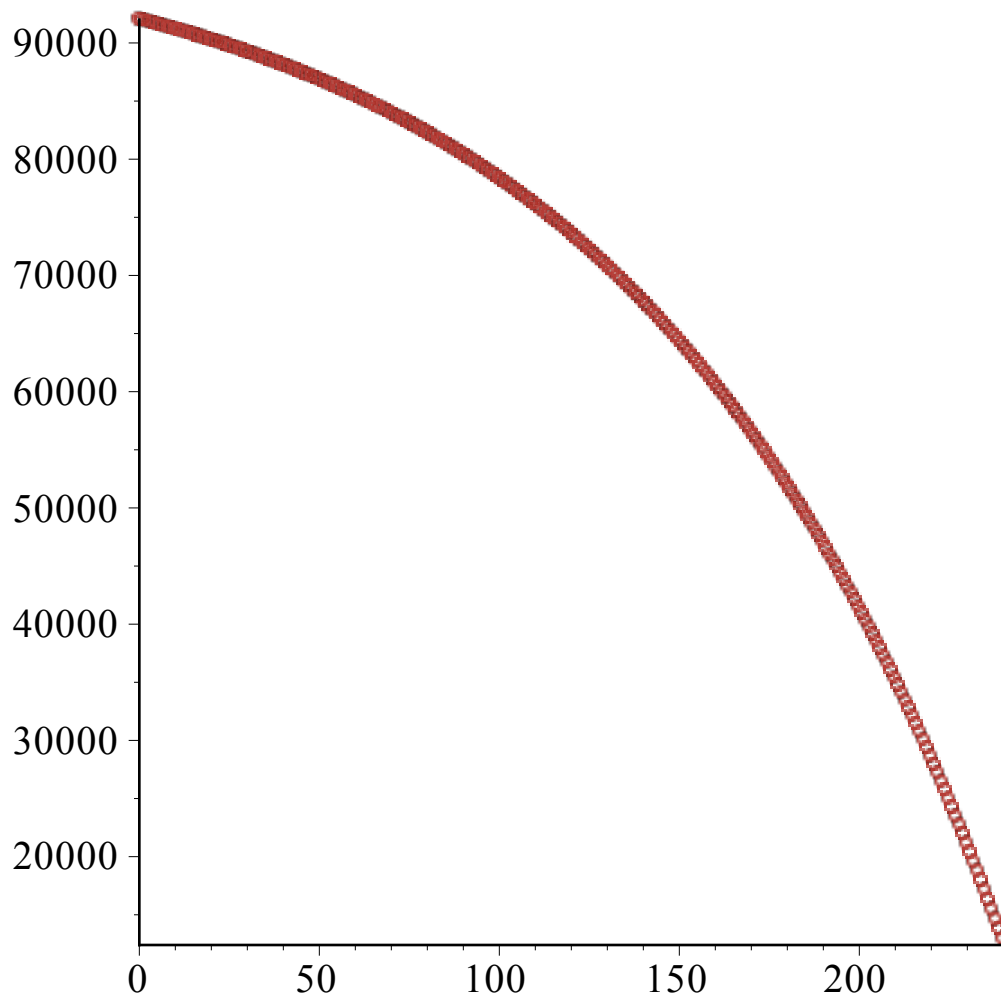
76, 82958.24196
77, 82787.82438
78, 82615.70262
79, 82441.85965
80, 82266.27825
81, 82088.94103
82, 81909.83044
83, 81728.92874
84, 81546.21803
85, 81361.68021
86, 81175.29701
87, 80987.04998
88, 80796.92048
89, 80604.88968
90, 80410.93858
91, 80215.04797
92, 80017.19845
93, 79817.37043
94, 79615.54413
95, 79411.69957
96, 79205.81657
97, 78997.87474
98, 78787.85349
99, 78575.73202
100, 78361.48934
101, 78145.10423
102, 77926.55527
103, 77705.82082
104, 77482.87903
105, 77257.70782
106, 77030.28490
107, 76800.58775
108, 76568.59363
109, 76334.27957

110, 76097.62237
111, 75858.59859
112, 75617.18458
113, 75373.35643
114, 75127.08999
115, 74878.36089
116, 74627.14450
117, 74373.41594
118, 74117.15010
119, 73858.32160
120, 73596.90482
121, 73332.87387
122, 73066.20261
123, 72796.86464
124, 72524.83329
125, 72250.08162
126, 71972.58244
127, 71692.30826
128, 71409.23134
129, 71123.32365
130, 70834.55689
131, 70542.90246
132, 70248.33148
133, 69950.81479
134, 69650.32294
135, 69346.82617
136, 69040.29443
137, 68730.69737
138, 68418.00434
139, 68102.18438
140, 67783.20622
141, 67461.03828
142, 67135.64866
143, 66807.00515

144, 66475.07520
145, 66139.82595
146, 65801.22421
147, 65459.23645
148, 65113.82881
149, 64764.96710
150, 64412.61677
151, 64056.74294
152, 63697.31037
153, 63334.28347
154, 62967.62630
155, 62597.30256
156, 62223.27559
157, 61845.50835
158, 61463.96343
159, 61078.60306
160, 60689.38909
161, 60296.28298
162, 59899.24581
163, 59498.23827
164, 59093.22065
165, 58684.15286
166, 58270.99439
167, 57853.70433
168, 57432.24137
169, 57006.56378
170, 56576.62942
171, 56142.39571
172, 55703.81967
173, 55260.85787
174, 54813.46645
175, 54361.60111
176, 53905.21712
177, 53444.26929

178, 52978.71198
179, 52508.49910
180, 52033.58409
181, 51553.91993
182, 51069.45913
183, 50580.15372
184, 50085.95526
185, 49586.81481
186, 49082.68296
187, 48573.50979
188, 48059.24489
189, 47539.83734
190, 47015.23571
191, 46485.38807
192, 45950.24195
193, 45409.74437
194, 44863.84181
195, 44312.48023
196, 43755.60503
197, 43193.16108
198, 42625.09269
199, 42051.34362
200, 41471.85706
201, 40886.57563
202, 40295.44139
203, 39698.39580
204, 39095.37976
205, 38486.33356
206, 37871.19690
207, 37249.90887
208, 36622.40796
209, 35988.63204
210, 35348.51836
211, 34702.00354

212, 34049.02358
213, 33389.51382
214, 32723.40896
215, 32050.64305
216, 31371.14948
217, 30684.86097
218, 29991.70958
219, 29291.62668
220, 28584.54295
221, 27870.38838
222, 27149.09226
223, 26420.58318
224, 25684.78901
225, 24941.63690
226, 24191.05327
227, 23432.96380
228, 22667.29344
229, 21893.96637
230, 21112.90603
231, 20324.03509
232, 19527.27544
233, 18722.54819
234, 17909.77367
235, 17088.87141
236, 16259.76012
237, 15422.35772
238, 14576.58130
239, 13722.34711
240, 12859.57058



$$-\frac{100000}{1.01^{240}};$$

-9180.583655

(6)

100000 + %;

90819.41634

(7)

```

a := 90819.42 :
pts := [0, a] :
print(0, a) :
for i from 1 to 240 do
  a := f(a) :
  pts := pts, [i, a] :
  print(i, a);
od:
plot([pts], style = point, symbol = circle, colour = brown);
0, 90819.42
1, 90727.6142
2, 90634.89034

```

3, 90541.23924
4, 90446.65163
5, 90351.11815
6, 90254.62933
7, 90157.17562
8, 90058.74738
9, 89959.33485
10, 89858.92820
11, 89757.51748
12, 89655.09265
13, 89551.64358
14, 89447.16002
15, 89341.63162
16, 89235.04794
17, 89127.39842
18, 89018.67240
19, 88908.85912
20, 88797.94771
21, 88685.92719
22, 88572.78646
23, 88458.51432
24, 88343.09946
25, 88226.53045
26, 88108.79575
27, 87989.88371
28, 87869.78255
29, 87748.48038
30, 87625.96518
31, 87502.22483
32, 87377.24708
33, 87251.01955
34, 87123.52975
35, 86994.76505
36, 86864.71270

37, 86733.35983
38, 86600.69343
39, 86466.70036
40, 86331.36736
41, 86194.68103
42, 86056.62784
43, 85917.19412
44, 85776.36606
45, 85634.12972
46, 85490.47102
47, 85345.37573
48, 85198.82949
49, 85050.81778
50, 84901.32596
51, 84750.33922
52, 84597.84261
53, 84443.82104
54, 84288.25925
55, 84131.14184
56, 83972.45326
57, 83812.17779
58, 83650.29957
59, 83486.80257
60, 83321.67060
61, 83154.88731
62, 82986.43618
63, 82816.30054
64, 82644.46355
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69, 81759.15676
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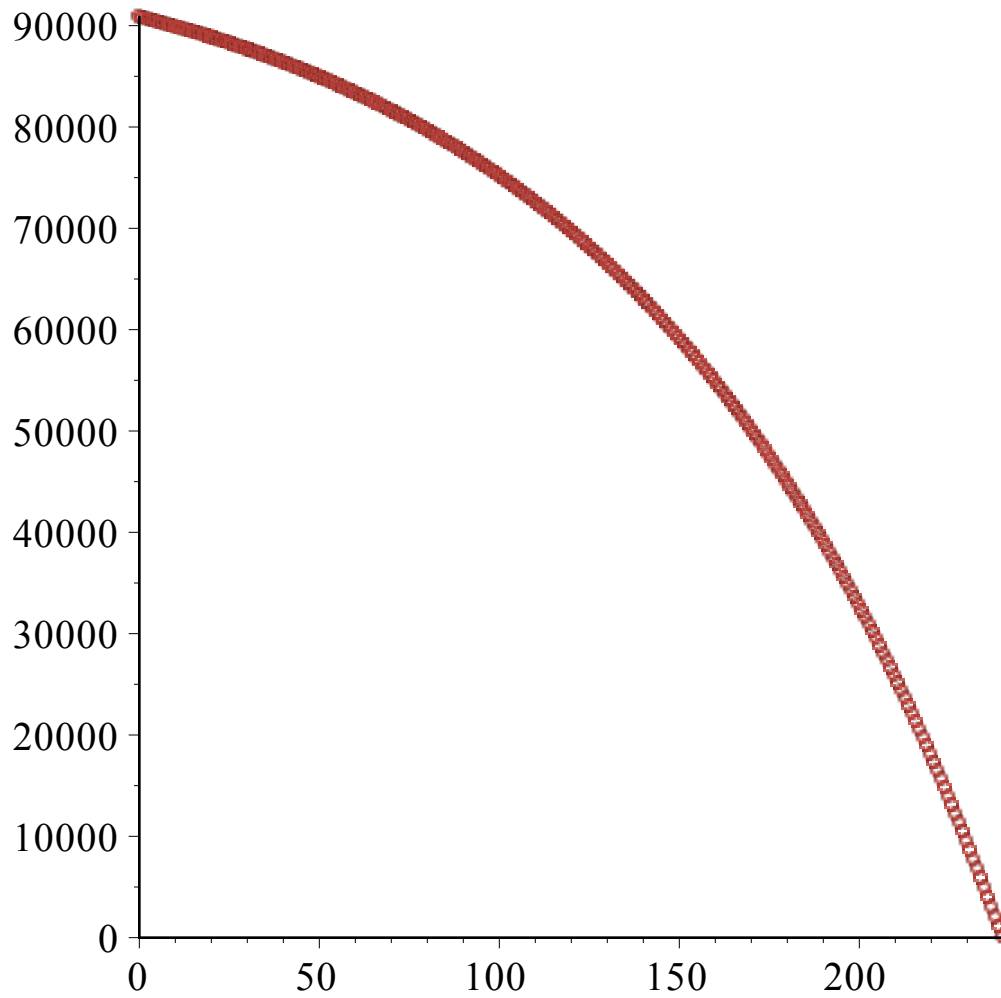
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79, 79850.76096
80, 79649.26857
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82, 79240.21887
83, 79032.62106
84, 78822.94727
85, 78611.17674
86, 78397.28851
87, 78181.26140
88, 77963.07401
89, 77742.70475
90, 77520.13180
91, 77295.33312
92, 77068.28645
93, 76838.96931
94, 76607.35900
95, 76373.43259
96, 76137.16692
97, 75898.53859
98, 75657.52398
99, 75414.09922
100, 75168.24021
101, 74919.92261
102, 74669.12184
103, 74415.81306
104, 74159.97119

105, 73901.57090
106, 73640.58661
107, 73376.99248
108, 73110.76240
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111, 72295.99161
112, 72018.95153
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123, 68782.42992
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131, 66195.84490
132, 65857.80335
133, 65516.38138
134, 65171.54519
135, 64823.26064
136, 64471.49325
137, 64116.20818
138, 63757.37026

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149, 59565.24518
150, 59160.89763
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153, 57923.43200
154, 57502.66632
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163, 53521.29202
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166, 52112.94069
167, 51634.07010
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172, 49166.92159

173, 48658.59081
174, 48145.17672
175, 47626.62849
176, 47102.89477
177, 46573.92372
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179, 45500.05959
180, 44955.06019
181, 44404.61079
182, 43848.65690
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184, 42720.01490
185, 42147.21505
186, 41568.68720
187, 40984.37407
188, 40394.21781
189, 39798.15999
190, 39196.14159
191, 38588.10301
192, 37973.98404
193, 37353.72388
194, 36727.26112
195, 36094.53373
196, 35455.47907
197, 34810.03386
198, 34158.13420
199, 33499.71554
200, 32834.71270
201, 32163.05983
202, 31484.69043
203, 30799.53733
204, 30107.53270
205, 29408.60803
206, 28702.69411

207, 27989.72105
208, 27269.61826
209, 26542.31444
210, 25807.73758
211, 25065.81496
212, 24316.47311
213, 23559.63784
214, 22795.23422
215, 22023.18656
216, 21243.41843
217, 20455.85261
218, 19660.41114
219, 18857.01525
220, 18045.58540
221, 17226.04125
222, 16398.30166
223, 15562.28468
224, 14717.90753
225, 13865.08661
226, 13003.73748
227, 12133.77485
228, 11255.11260
229, 10367.66373
230, 9471.34037
231, 8566.053774
232, 7651.714312
233, 6728.231455
234, 5795.513770
235, 4853.468908
236, 3902.003597
237, 2941.023633
238, 1970.433869
239, 990.138208
240, 0.039590



```

a := 90819.41 :
pts := [0, a] :
print(0, a) :
for i from 1 to 240 do
    a := f(a) :
    pts := pts, [i, a] :
    print(i, a);
od:
plot([pts], style = point, symbol = circle, colour = brown);
    0, 90819.41
    1, 90727.6041
    2, 90634.88014
    3, 90541.22894
    4, 90446.64123
    5, 90351.10764
    6, 90254.61872
    7, 90157.16491

```

8, 90058.73656
9, 89959.32393
10, 89858.91717
11, 89757.50634
12, 89655.08140
13, 89551.63221
14, 89447.14853
15, 89341.62002
16, 89235.03622
17, 89127.38658
18, 89018.66045
19, 88908.84705
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21, 88685.91488
22, 88572.77403
23, 88458.50177
24, 88343.08679
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26, 88108.78284
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30, 87625.95174
31, 87502.21126
32, 87377.23337
33, 87251.00570
34, 87123.51576
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36, 86864.69843
37, 86733.34541
38, 86600.67886
39, 86466.68565
40, 86331.35251
41, 86194.66604

42, 86056.61270
43, 85917.17883
44, 85776.35062
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46, 85490.45527
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48, 85198.81342
49, 85050.80155
50, 84901.30957
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55, 84131.12462
56, 83972.43587
57, 83812.16023
58, 83650.28183
59, 83486.78465
60, 83321.65250
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62, 82986.41771
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66, 82295.59805
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69, 81759.13697
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74, 80828.66964
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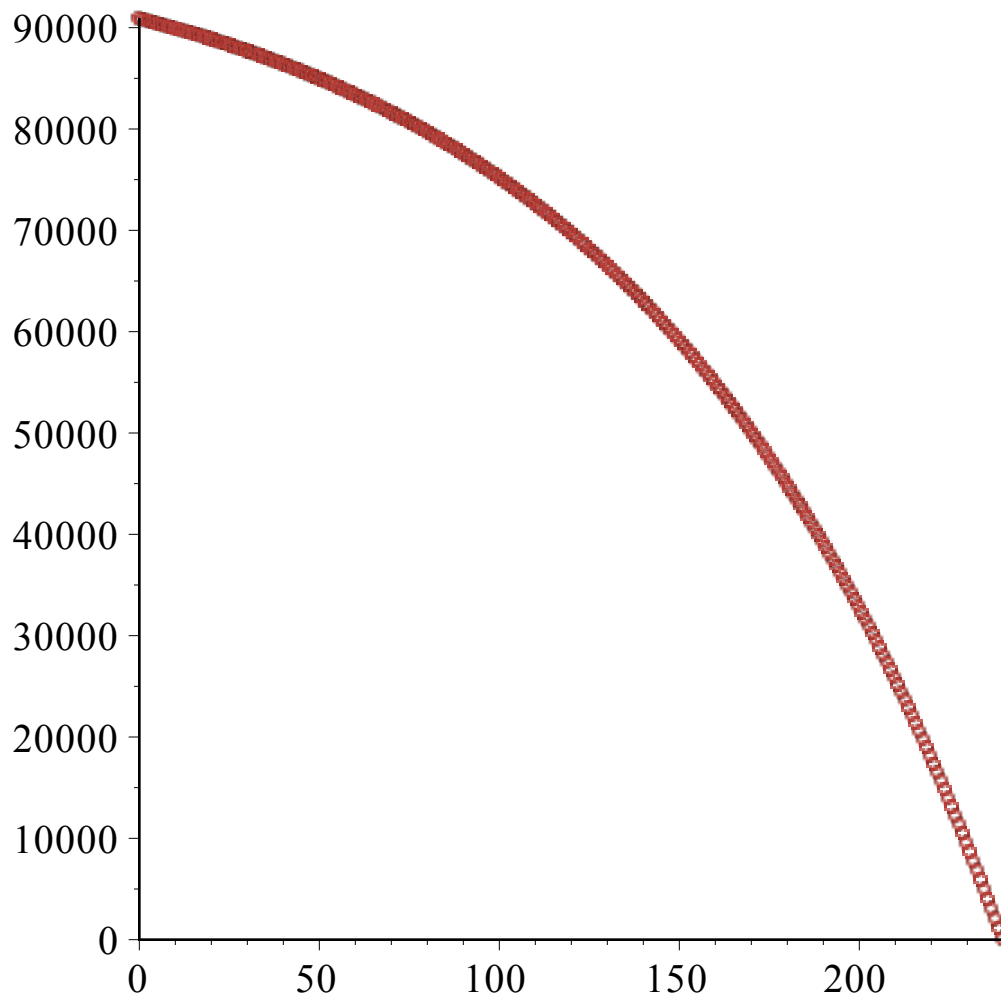
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183, 43287.08191
184, 42719.95273
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186, 41568.62378
187, 40984.31002
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190, 39196.07560
191, 38588.03636
192, 37973.91672
193, 37353.65589
194, 36727.19245
195, 36094.46437
196, 35455.40901
197, 34809.96310
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206, 28702.61671
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208, 27269.53931
209, 26542.23470
210, 25807.65705
211, 25065.73362

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213, 23559.55487
214, 22795.15042
215, 22023.10192
216, 21243.33294
217, 20455.76627
218, 19660.32393
219, 18856.92717
220, 18045.49644
221, 17225.95140
222, 16398.21091
223, 15562.19302
224, 14717.81495
225, 13864.99310
226, 13003.64303
227, 12133.67946
228, 11255.01625
229, 10367.56641
230, 9471.24207
231, 8565.954491
232, 7651.614036
233, 6728.130176
234, 5795.411478
235, 4853.365593
236, 3901.899249
237, 2940.918241
238, 1970.327423
239, 990.030697
240, -0.0689960



$f := x \rightarrow 1.546 \cdot x \cdot (1 - x);$

$x \rightarrow 1.546 x (1 - x)$

(8)

$a := 1.1 :$

$pts := [0, a] :$

$print(0, a) :$

for i **from** 1 **to** 50 **do**

$a := f(a) :$

$pts := pts, [i, a] :$

$print(i, a);$

od:

$plot([pts], style = point, symbol = circle, colour = brown);$

0, 1.1

1, -0.17006

2, -0.3076237040

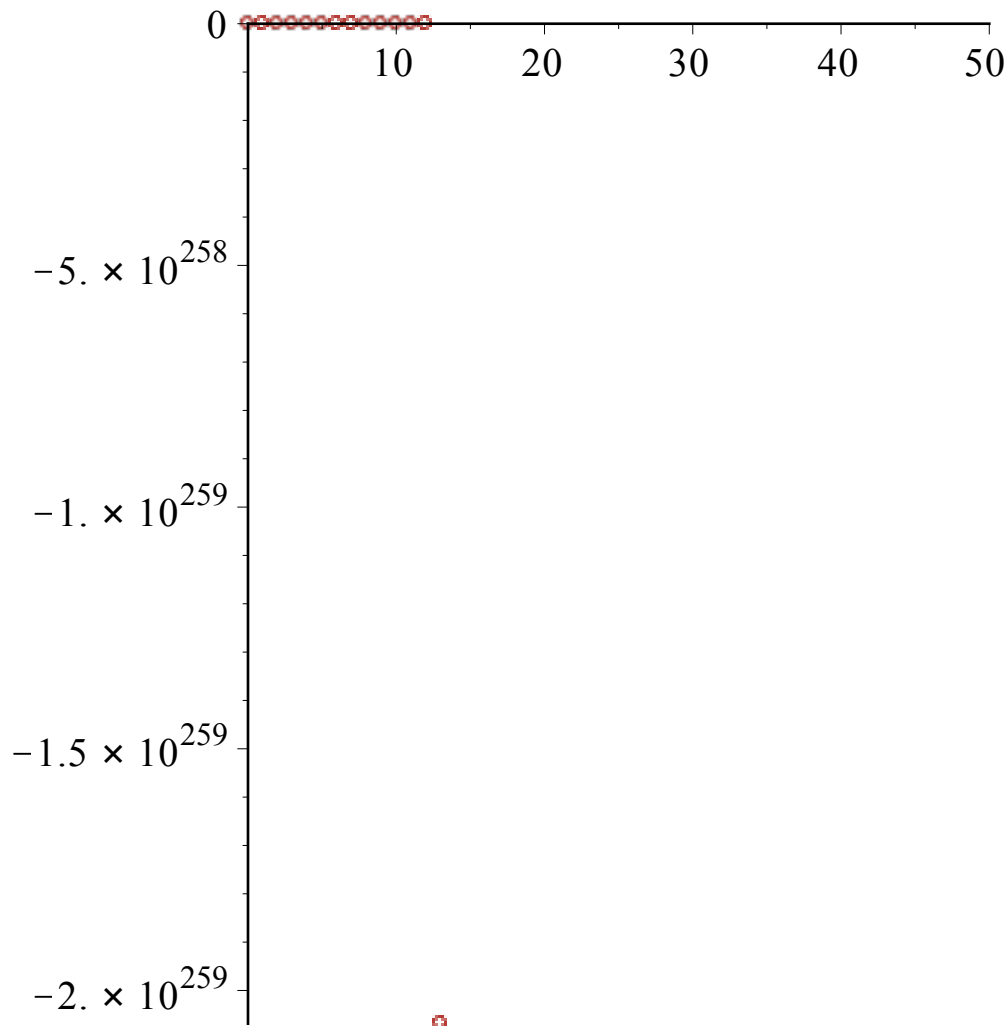
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9, -1.071141390 10^{16}
10, -1.773793634 10^{32}
11, -4.864247601 10^{64}
12, -3.657975870 10^{129}
13, -2.068669742 10^{259}
14, -6.615943899 10^{518}
15, -6.766952336 10^{1037}
16, -7.079388149 10^{2075}
17, -7.748202074 10^{4151}
18, -9.281354632 10^{8303}
19, -1.331779187 10^{16608}
20, -2.742040951 10^{33216}
21, -1.162404714 10^{66433}
22, -2.088931576 10^{132866}
23, -6.746179909 10^{265732}
24, -7.035991845 10^{531465}
25, -7.653501018 $10^{1062931}$
26, -9.055861630 $10^{2125863}$
27, -1.267853418 $10^{4251728}$
28, -2.485121239 $10^{8503456}$
29, -9.547829426 $10^{17006912}$
30, -1.409349782 $10^{34013826}$
31, -3.070768485 $10^{68027652}$
32, -1.457819111 $10^{136055305}$
33, -3.285615723 $10^{272110610}$
34, -1.668948847 $10^{544221221}$
35, -4.306213332 $10^{1088442442}$

36, $-2.866820966 \cdot 10^{2176884885}$
37, $-1.270605215 \cdot 10^{4353769771}$
38, $-2.495920548 \cdot 10^{8707539542}$
39, $-9.630991564 \cdot 10^{17415079084}$
40, $-1.434007737 \cdot 10^{34830158170}$
41, $-3.179160681 \cdot 10^{69660316340}$
42, $-1.562551884 \cdot 10^{139320632681}$
43, $-3.774664732 \cdot 10^{278641265362}$
44, $-2.202755308 \cdot 10^{557282530725}$
45, $-7.501394444 \cdot 10^{1114565061450}$
46, $-8.699484016 \cdot 10^{2229130122901}$
47, $-1.170028602 \cdot 10^{4458260245804}$
48, $-2.116422873 \cdot 10^{8916520491608}$
49, $-6.924913973 \cdot 10^{17833040983216}$
50, $-7.413755423 \cdot 10^{35666081966433}$



$f := x \rightarrow 1.3 \cdot x \cdot (1 - x);$

$x \rightarrow 1.3 x (1 - x)$

(9)

```

a := 0.1 :
pts := [0, a] :
print(0, a) :
for i from 1 to 50 do
  a := f(a) :
  pts := pts, [i, a] :
  print(i, a);
od:
plot([pts], style = point, symbol = circle, colour = brown);
0, 0.1
1, 0.117
2, 0.1343043
3, 0.1511466515
4, 0.1667917437
5, 0.1806639353

```

6, 0.1924318211
7, 0.2020223599
8, 0.2095721238
9, 0.2153471433
10, 0.2196645765
11, 0.2228356654
12, 0.2251339111
13, 0.2267832231
14, 0.2279583706
15, 0.2287913575
16, 0.2293796339
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18, 0.2300853347
19, 0.2302898955
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21, 0.2305340008
22, 0.2306044978
23, 0.2306538824
24, 0.2306884696
25, 0.2307126895
26, 0.2307296478
27, 0.2307415206
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38, 0.2307686828
39, 0.2307688472

40, 0.2307689623
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44, 0.2307691663
45, 0.2307691856
46, 0.2307691992
47, 0.2307692087
48, 0.2307692153
49, 0.2307692199
50, 0.2307692232

