In [91]:
```
v=var('v')
```

In [92]:
```
f(v)=879*(v+v^2+v^3+v^4+v^5+v^6+v^7+v^8+v^9+v^10+v^11+v^12)-9800 # van
 del flusso di cassa
```

In [93]:
```
f
```

Out[93]:
```
v |--> 879*v^12 + 879*v^11 + 879*v^10 + 879*v^9 + 879*v^8 + 879*v^7 + 8
79*v^6 + 879*v^5 + 879*v^4 + 879*v^3 + 879*v^2 + 879*v - 9800
```

In [94]:
```
g(v)=diff(f(v),v)# derivata di f
```

In [95]:
```
g
```

Out[95]:
```
v |--> 10548*v^11 + 9669*v^10 + 8790*v^9 + 7911*v^8 + 7032*v^7 + 6153*v
^6 + 5274*v^5 + 4395*v^4 + 3516*v^3 + 2637*v^2 + 1758*v + 879
```

In [96]:
```
indici = range(1,35)# iterazioni
```

In [97]:
```
a=0.076 # stima del tasso nominale < TAEG
```

In [98]:
```
a
```

Out[98]:
```
0.0760000000000000
```

In [99]:
```
for i in indici: # metodo di Newton
    a=a-(f(a)/g(a))
    print a
```

```
9.52455279181312
8.72300437524066
7.98815815191175
7.31444431212273
6.69675548933107
```

```
6.13040788108764
5.61110551932131
5.13490739699959
4.69819717003225
4.29765515814054
3.93023236383785
3.59312621118452
3.28375767148887
2.99974938945171
2.73890435956871
2.49918467932881
2.27869010320861
2.07563710454323
1.88834258951030
1.71522707688624
1.55488339547336
1.40634400552342
1.26989941843423
1.14920010940762
1.05483842509072
1.00242826011396
0.989304257252737
0.988630961667403
0.988629297380540
0.988629297370405
0.988629297370405
0.988629297370405
0.988629297370405
0.988629297370405
```

In [100]:
```
1/a-1 # mensile
```

Out[100]:
```
0.0115014825676714
```

In [101]:
```
(1/a)^12 -1 # annuale
```

Out[101]:
```
0.147092087026118
```