

10000 5years 0.05 p.a. monthly IP&PP

anuity $a = \text{Credit} \cdot \text{interest_rate_}(\text{monthly}) / (1 - 1 / (1 + \text{interest_rate_}(\text{monthly}))^n)$

a= 188.7123

$\text{amortization_1} = \text{anuity} \cdot \text{Dis}$
 $\text{interest_1} = a \cdot (1 - \text{DF}^n)$

Nr. Of payr	annuity	interest	amortizatio	debt
0				10000
1	188.7123	41.66667	147.0457	9852.954
2	188.7123	41.05398	147.6584	9705.296
3	188.7123	40.43873	148.2736	9557.022
4	188.7123	39.82093	148.8914	9408.131
5	188.7123	39.20055	149.5118	9258.619
6	188.7123	38.57758	150.1348	9108.484
7	188.7123	37.95202	150.7603	8957.724
8	188.7123	37.32385	151.3885	8806.336
9	188.7123	36.69307	152.0193	8654.316
10	188.7123	36.05965	152.6527	8501.664
11	188.7123	35.4236	153.2887	8348.375
12	188.7123	34.7849	153.9274	8194.447
13	188.7123	34.14353	154.5688	8039.879
14	188.7123	33.49949	155.2128	7884.666
15	188.7123	32.85277	155.8596	7728.806
16	188.7123	32.20336	156.509	7572.297
17	188.7123	31.55124	157.1611	7415.136
18	188.7123	30.8964	157.8159	7257.32
19	188.7123	30.23883	158.4735	7098.847
20	188.7123	29.57853	159.1338	6939.713
21	188.7123	28.91547	159.7969	6779.916
22	188.7123	28.24965	160.4627	6619.453
23	188.7123	27.58106	161.1313	6458.322
24	188.7123	26.90968	161.8027	6296.519
25	188.7123	26.2355	162.4768	6134.043
26	188.7123	25.55851	163.1538	5970.889
27	188.7123	24.8787	163.8336	5807.055
28	188.7123	24.19606	164.5163	5642.539
29	188.7123	23.51058	165.2018	5477.337
30	188.7123	22.82224	165.8901	5311.447
31	188.7123	22.13103	166.5813	5144.866
32	188.7123	21.43694	167.2754	4977.59
33	188.7123	20.73996	167.9724	4809.618
34	188.7123	20.04007	168.6723	4640.946
35	188.7123	19.33727	169.3751	4471.571
36	188.7123	18.63154	170.0808	4301
37	188.7123	17.92287	170.7895	4130.7
38	188.7123	17.21125	171.5011	3959.199
39	188.7123	16.49666	172.2157	3786.984
40	188.7123	15.7791	172.9332	3614.05
41	188.7123	15.05854	173.6538	3440.397
42	188.7123	14.33499	174.3774	3266.019
43	188.7123	13.60841	175.1039	3090.915
44	188.7123	12.87881	175.8335	2915.082
45	188.7123	12.14617	176.5662	2738.516

$\text{amortization} = \text{Geometric S}$
 $q = (1+r) \quad 1.004167$

amortization in r+1 period
 interest in r+1 period = a*(

interest period in 24th pay
 amortization period in 24th

How much is the remainin
 Note: Amortization is GS=

The remaining debt=

How much will be paid in 36
 36*annuity-sum of amortiz

1095
1095

sum in excel:

46	188.7123	11.41048	177.3019	2561.214
47	188.7123	10.67172	178.0406	2383.173
48	188.7123	9.929888	178.7824	2204.391
49	188.7123	9.184961	179.5274	2024.863
50	188.7123	8.436931	180.2754	1844.588
51	188.7123	7.685783	181.0266	1663.561
52	188.7123	6.931506	181.7808	1481.781
53	188.7123	6.174086	182.5383	1299.242
54	188.7123	5.41351	183.2988	1115.943
55	188.7123	4.649764	184.0626	931.8809
56	188.7123	3.882837	184.8295	747.0514
57	188.7123	3.112714	185.5996	561.4518
58	188.7123	2.339382	186.373	375.0788
59	188.7123	1.562828	187.1495	187.9293
60	188.7123	0.783039	187.9293	0.00

Interest payment in total

Nr. Of annuities*annuity-Debt

1322.74

1322.74

contFactor^n 147.0457
41.66667

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$$= a \cdot DF^{(n-r)} / (1 - DF^{(n-r)})$$

ment: 26.90968
1 payment: 161.8027

g debt after 3 years?

> Sum of Amortization: 5699
 Excel 5699

4301

3 years just on interest?
ation

10000 5years 0.05 p.a. monthy IP&PP

Amount of amortization: 166.666667

Nr. Of payr	annuity	interest	amortizatio	debt	
0				10000	interest&annui
1	208.3333	41.66667	166.6667	9833.333333	$a_n = a_1 + (n-1) \cdot d$
2	207.6389	40.97222	166.6667	9666.666667	$S = n/2 \cdot (a_1 + a_n)$
3	206.9444	40.27778	166.6667	9500	
4	206.25	39.58333	166.6667	9333.333333	
5	205.5556	38.88889	166.6667	9166.666667	
6	204.8611	38.19444	166.6667	9000	
7	204.1667	37.5	166.6667	8833.333333	
8	203.4722	36.80556	166.6667	8666.666667	
9	202.7778	36.11111	166.6667	8500	
10	202.0833	35.41667	166.6667	8333.333333	
11	201.3889	34.72222	166.6667	8166.666667	
12	200.6944	34.02778	166.6667	8000	Paid interest ir
13	200	33.33333	166.6667	7833.333333	454.1666667
14	199.3056	32.63889	166.6667	7666.666667	Excel
15	198.6111	31.94444	166.6667	7500	454.1666667
16	197.9167	31.25	166.6667	7333.333333	
17	197.2222	30.55556	166.6667	7166.666667	
18	196.5278	29.86111	166.6667	7000	
19	195.8333	29.16667	166.6667	6833.333333	
20	195.1389	28.47222	166.6667	6666.666667	
21	194.4444	27.77778	166.6667	6500	
22	193.75	27.08333	166.6667	6333.333333	interest after 2
23	193.0556	26.38889	166.6667	6166.666667	25.69444444
24	192.3611	25.69444	166.6667	6000	
25	191.6667	25	166.6667	5833.333333	
26	190.9722	24.30556	166.6667	5666.666667	
27	190.2778	23.61111	166.6667	5500	
28	189.5833	22.91667	166.6667	5333.333333	
29	188.8889	22.22222	166.6667	5166.666667	
30	188.1944	21.52778	166.6667	5000	
31	187.5	20.83333	166.6667	4833.333333	
32	186.8056	20.13889	166.6667	4666.666667	
33	186.1111	19.44444	166.6667	4500	
34	185.4167	18.75	166.6667	4333.333333	
35	184.7222	18.05556	166.6667	4166.666667	
36	184.0278	17.36111	166.6667	4000	
37	183.3333	16.66667	166.6667	3833.333333	
38	182.6389	15.97222	166.6667	3666.666667	
39	181.9444	15.27778	166.6667	3500	
40	181.25	14.58333	166.6667	3333.333333	
41	180.5556	13.88889	166.6667	3166.666667	
42	179.8611	13.19444	166.6667	3000	
43	179.1667	12.5	166.6667	2833.333333	
44	178.4722	11.80556	166.6667	2666.666667	
45	177.7778	11.11111	166.6667	2500	
46	177.0833	10.41667	166.6667	2333.333333	

47	176.3889	9.722222	166.6667	2166.666667
48	175.6944	9.027778	166.6667	2000
49	175	8.333333	166.6667	1833.333333
50	174.3056	7.638889	166.6667	1666.666667
51	173.6111	6.944444	166.6667	1500
52	172.9167	6.25	166.6667	1333.333333
53	172.2222	5.555556	166.6667	1166.666667
54	171.5278	4.861111	166.6667	1000
55	170.8333	4.166667	166.6667	833.3333333
56	170.1389	3.472222	166.6667	666.6666667
57	169.4444	2.777778	166.6667	500
58	168.75	2.083333	166.6667	333.3333333
59	168.0556	1.388889	166.6667	166.6666667
60	167.3611	0.694444	166.6667	0

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prof

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one year:

years.