



5 Year Repayment Schedule

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Article citation:

[Gaffney, Mason]. "5 Year Repayment Schedule." N.d. Study guide.

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5-yr repayment schedule

Here is a repayment schedule showing the installment plan at work. 30 years is too tedious, so this is for just 5 years. First, some algebra. Let the installment be one (1) per year. Then Repayment, R , is I^n . Subtract that from the original P and you will have the new balance. It should and does equal the present value of a 4-year annuity of 1.

First find annual installment using IPF. It is \$26.38.

SCHEDULE OF REPAYMENT, DEBT OF \$100 OVER 5 YEARS, 10% INTEREST

Row #								
1A	Years from 1/1	Remaini ng	5	4	3	2	1	0
1B		Elapsed	0	1	2	3	4	5
2	Pmt 12/31		26.38	26.38	26.38	26.38	26.38	0
3	Intrst to 12/31		10.00	8.36	6.56	4.58	2.40	0
4A	Repaym ent	Current	16.38	18.02	19.82	21.80	23.98	0
4B		Cume	16.38	34.40	54.42	76.02	100	100
5	Balanc e, 1/1		100.00	83.62	65.60	45.78	23.98	0

Perform two checks, to see how it all fits together. I first figured Row 4A, current repayment, as 26.38×1.1^{-n} . Then:

1. Interest, Row 3, is found by subtracting current repayment, Row 4A, from total payment, Row 2. Check that it is also 10% of row 5, that is that it is $P \times i$.

2. Balance, row 5, is \$100 less cumulative repayment, Row 4B, (using previous year repayment). Check that Balance is also $26.38 \times PVF$ (present value factor). Note that balance value is on Jan 1, when payments are a year later on Dec. 31 -- that is the way we originally derived the PVF, remember? -- the first term of the progression was $a/(1+i)$. You have to watch the end-points carefully to make these formulas come out just right.