

Repayment plan

1. A bank gives you a loan in the amount of 4,000,000.00. You promise to repay the loan in 25 years by monthly regular payment. The bank requires 10 % p. a. You provide regular monthly payment and the bank calculates interest every month. Estimate the first two rows in the repayment plan and calculate how much you pay only on interest after five years and finally write the 98. row in the amortization table.

#	A	I	M	D
				4,000,000.00
1	36,348.03	33,333.33	3,014.696	3,996,985.00
2	36,348.03	33,308.21	3,039.819	3,993,945.00
⋮	⋮	⋮	⋮	⋮
98	36,348.03	29,605.18	6,742.852	3,545,878.00
⋮	⋮	⋮	⋮	⋮
300	88	788	6344	0

$$\left(\sum_1^{60} = 1,947,433.00\right)$$

2. Provide the same task with a modification of your payment. Now, you will pay once in three months. Everything else remains unchanged.

#	A	I	M	D
				4,000,000.00
1	109,955.314	100,835.648	9,119.666	3,990,880.334
2	109,955.314	100,605.751	9,349.563	3,981,530.771
⋮	⋮	⋮	⋮	⋮
98	109,955.314	7,913.280	102,042.034	211,866.020
⋮	⋮	⋮	⋮	⋮
100	109,955.314	2,703.697	107,251.618	0

$$\left(\sum_1^{20} = 1,965,657.00\right)$$

3. Further, provide all calculations if you assume that the amount of amortization will be by each payment the same. Firstly, PP = 1 month and secondly PP = 3 months. Everything else remains unchanged.

#	A	I	M	D
				4,000,000.00
1	46,666.6674	33,333.333	13,333.333	3,986,666.667
2	46,555.556	33,222.222	13,333.333	3,973,333.333
⋮	⋮	⋮	⋮	⋮
98	109,955.314	7,913.280	13,333.333	2,693,333.333
⋮	⋮	⋮	⋮	⋮
300	109,955.314	2,703.697	13,333.333	0

$$\left(\sum_1^{60} = 1,803,333.333\right)$$

#	A	I	M	D
				4,000,000.00
1	140,835.648	100,835.648	40,000.00	3,960,000.00
2	139,827.292	99,827.291	40,000.00	3,981,530.771
⋮	⋮	⋮	⋮	⋮
98	43,025.069	3,025.069	40,000.00	80,000.00
⋮	⋮	⋮	⋮	⋮
100	41,008.356	1,008.356	40,000.00	0

$$(\sum_1^{20} = 1,825,125.231)$$