

Loan & Lease Statements

A Loan Statement is a document recorded by the lender, a bank, financial institution. It includes all the information related to the loan, such as, Loan Amount, Interest Rate, Time Period of the Loan, Number of Installments and so on. It is provided to the borrower at every installment period, so that they can make payments before the due date to the lender. It is a legal communication between the lender and the borrower.

A Lease can be defined as a contract between the lessee and the lessor, in which the lessor (landlord) rents the property owned by him/her to the lessee (tenant). The lease statement also includes the information related to the periodical payments to be made by the lessee to the lessor. The asset/property rented is to be returned to the lessor at the end of the contract.

Financial Functions

Name	Description	Syntax
PMT	This function is used to calculate the (EMI or installments) payment amount including Interest Amount and Principal Amount. $PMT = (\text{Interest Amount} + \text{Principal Amount})$. From this function you will come to know how much money you need to pay per term.	<code>=PMT(rate, nper, pv, fv, type)</code>
IPMT	This function will calculate only the Interest Amount you need to pay per term.	<code>=IPMT(rate, nper, pv, fv, type)</code>
PPMT	This function will calculate only the Principal Amount you need to pay per term.	<code>=PPMT(rate, nper, pv, fv, type)</code>

- rate: It is the effective rate of interest. Suppose rate of interest is 14% and your payments is on monthly basis then rate will be 14/12.
- nper: Total no of periods to clear your loan.
- per: This is different from nper. It is the total no of periods you wish to clear your loan. Suppose bank said that you must clear your loan in 2 years,(that means 24 months if it is monthly payment) but you wish to clear it in 14 months. This 14 months is per.
- pv: Present value. This amount is basic. No interest is included here. It is the principal value or amount of investment.
- fv: Future Value. If future value is omitted it is assumed to be 0. (In case of loan there will be no future value)
- Type : Type is 0 if the payment is due at the end of the period and 1 if the payment is due at the beginning of the period. If omitted it is assumed to be 0.

Question:

A person borrowed a loan of Rs.1,00,000, for a period of 5 years to be repaid in equated quarterly installments at an interest rate of 15% p.a. You need to prepare a loan repayment schedule as per given format:

Amount of loan	
Periodicity	
Years	
Rate of interest	
No of Installments	
Amount of installments	

Installment no	Opening Balance	Interest	Installment	Closing Balance

Solution:

To Prepare the loan repayment schedule

- 1st create the basic structure of the table as given in the table below

M13 fx						
	A	B	C	D	E	F
1	Amount of loan	₹100,000.00				
2	Periodicity	4				
3	Years	5				
4	Rate of interest	15.00%				
5	No of Installments					
6	Amount of installments					
7						
8	Installment no	Opening	Interest	Principal	Installment	Closing Balance
9						

- Total No. of Installments = Total No. of Years*Periodicity

So the formula will be “=B3*B2”

B5		\sum	=B3*B2
	A	B	C
1	Amount of loan	₹100,000.00	
2	Periodicity	4	
3	Years	5	
4	Rate of interest	15.00%	
5	No of Installments	20	
6	Amount of installments		

- To calculate this we will use the formula “=PMT(rate, nper, pv, fv, type)” as discussed earlier. So the excel formula will be =PMT(B4/B2,B3*B2,-B1,0,0)

B6		\sum	=PMT(B4/B2,B3*B2,-B1,0,0)
	A	B	C
1	Amount of loan	₹100,000.00	
2	Periodicity	4	
3	Years	5	
4	Rate of interest	15.00%	
5	No of Installments	20	
6	Amount of installments	₹7,196.21	

- Fill in the Number of Installments under Column Installment No. (Total 20 installments)
- Then fill in the Opening Balance in, which will be same as the Amount of Loan at the first Installment. There after previous closing balance will be the next opening balance.
- Interest =Opening Balance*(Interest Rate/Periodicity), put the formula below in Interest Column.

“=B9*(\$B\$4/\$B\$2)”

C9		fx		=B9*(\$B\$4/\$B\$2)		
	A	B	C	D	E	F
1	Amount of loan	₹100,000.00				
2	Periodicity	4				
3	Years	5				
4	Rate of interest	15.00%				
5	No of Installments	20				
6	Amount of installments					
7						
8	Installment no	Opening	Interest	Principal	Installment	Closing Balance
9	1	₹100,000.00	₹3,750.00	₹3,446.21	₹7,196.21	₹96,553.79

- In installment column put “**=B\$6**” (which is already calculated).
- Principal = Installment Amount – Interest Amount. So put the formula “**=E9-C9**” in principal column.
- Finally, closing balance is calculated as Closing Balance = Opening Balance – Principal Amount.

F9		fx =B9-D9				
	A	B	C	D	E	F
1	Amount of loan	₹100,000.00				
2	Periodicity	4				
3	Years	5				
4	Rate of interest	15.00%				
5	No of Installments	20				
6	Amount of installments	₹7,196.21				
7						
8	Installment no	Opening	Interest	Principal	Installment	Closing Balance
9	1	₹100,000.00	₹3,750.00	₹3,446.21	₹7,196.21	₹96,553.79

Now repeat the above steps for total no of installments. (in our case it is 20)

F28		f_x	=B28-D28			
	A	B	C	D	E	F
8	Installment no	Opening	Interest	Principal	Installment	Closing Balance
9	1	₹100,000.00	₹3,750.00	₹3,446.21	₹7,196.21	₹96,553.79
10	2	₹96,553.79	₹3,620.77	₹3,575.44	₹7,196.21	₹92,978.35
11	3	₹92,978.35	₹3,486.69	₹3,709.52	₹7,196.21	₹89,268.83
12	4	₹89,268.83	₹3,347.58	₹3,848.63	₹7,196.21	₹85,420.20
13	5	₹85,420.20	₹3,203.26	₹3,992.95	₹7,196.21	₹81,427.24
14	6	₹81,427.24	₹3,053.52	₹4,142.69	₹7,196.21	₹77,284.56
15	7	₹77,284.56	₹2,898.17	₹4,298.04	₹7,196.21	₹72,986.52
16	8	₹72,986.52	₹2,736.99	₹4,459.22	₹7,196.21	₹68,527.30
17	9	₹68,527.30	₹2,569.77	₹4,626.44	₹7,196.21	₹63,900.87
18	10	₹63,900.87	₹2,396.28	₹4,799.93	₹7,196.21	₹59,100.94
19	11	₹59,100.94	₹2,216.29	₹4,979.92	₹7,196.21	₹54,121.02
20	12	₹54,121.02	₹2,029.54	₹5,166.67	₹7,196.21	₹48,954.34
21	13	₹48,954.34	₹1,835.79	₹5,360.42	₹7,196.21	₹43,593.92
22	14	₹43,593.92	₹1,634.77	₹5,561.44	₹7,196.21	₹38,032.48
23	15	₹38,032.48	₹1,426.22	₹5,769.99	₹7,196.21	₹32,262.49
24	16	₹32,262.49	₹1,209.84	₹5,986.37	₹7,196.21	₹26,276.13
25	17	₹26,276.13	₹985.35	₹6,210.86	₹7,196.21	₹20,065.27
26	18	₹20,065.27	₹752.45	₹6,443.76	₹7,196.21	₹13,621.51
27	19	₹13,621.51	₹510.81	₹6,685.40	₹7,196.21	₹6,936.11
28	20	₹6,936.11	₹260.10	₹6,936.11	₹7,196.21	₹0.00