

## 05: Introduction to Financial Data Analysis

### Overview

The financial functions have been made available to execute a variety of financial calculations, including calculations of yield, investment valuations, interest rates, internal rate of return, asset depreciation, and payments.

Following activities will help students to identify the available financial functions and its usage in business decision making. Further it helps to apply the functions as single function as well as nested functions. This tutorial covers only the selected financial functions, PV, NPV, XNPV, FV, PMT, IPMT, PPMT, NPER, RATE, IRR, SLN, DB.



[List of financial functions](#)



### Activity 06.1

1. A person intends to deposit Rs.5, 000 at the end of each month for the next five years into a bank account. The interest paid by the bank is 16% per annum compounded monthly. What is the amount that the person will have in his/her account at the end of five years?
2. A person has an annuity that pays periodic payments of Rs.50,000 at the end of each month for 5 years with a 14.5% annual interest rate compounded monthly. What is the present value of this annuity?
3. Suppose a person is receiving the following cash flows. The rate of return is 12% per annum. Calculate the net present value of the series.

Year	1	2	3	4	5	6	7
Inflow	12000	200000	11000	13000	31000	12000	18000

4. A company considering a project which initially has 1,000,000 investments. Then the company will receive following cash inflows over next six years. What is the Internal Rate of Return of this project?

Year	1	2	3	4	5	6
Inflow	160000	180000	200000	540000	250000	250000

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5. Suppose a company considering a project which occurs following cash flows. Calculate the net present value of the series.

Details	In Rs. Mn	Dates
Rate of Discount	16.5%	
Initial Investment	-1000	1 <sup>st</sup> December 2023
1 <sup>st</sup> return	300	1 <sup>st</sup> January 2024
2 <sup>nd</sup> return	500	1 <sup>st</sup> February 2025
3 <sup>rd</sup> return	400	1 <sup>st</sup> March 2026
4 <sup>th</sup> return	300	1 <sup>st</sup> April 2027

6. A person has taken a loan of Rs.1,000,000 from a bank at an annual interest rate of 15% per annum compounded monthly. He wants to repay the loan in full in 15 years.
- What would be the monthly payment?
  - What would be the interest payment of 12<sup>th</sup> installment?
  - What would be the principal component of 12<sup>th</sup> installment?
7. A person needs Rs.50,000 and a loan will be given to him at a 15% p.a compounded monthly, with monthly payments of Rs. 5000. Calculate the number of periods required to repay the loan.
8. A person buys a microcomputer for Rs.480,000. The useful life of the computer is five years, and the salvage value of the machine after five years is Rs.20000.
- Calculate the yearly depreciation expense using the straight-line method.
  - Calculate the yearly depreciation expense using the declining method.

**Activity 06.2:**

1. Perform activity 03 using Google Sheets and report if any limitation found in performing the activity at Google sheets.
2. A person holds a product patent for five years and he can either sell the ownership of the payment for Rs. 2000000 or can grant it for a company to produce the product and earn Rs. 75,000 monthly. Assume that the interest rate of 14.5%. what is the best financially beneficiary option?
3. A company is considering two capital expenditure proposals. Both proposals are for similar products, and both are expected to operate for four years. Only one proposal can be accepted:

The following information is available.

	Proposal A	Proposal B
	Rs. In '000	Rs.
Initial investment	46,500	46,000
Profit year 1	6,500	4,500
Profit year 2	3,500	2,500
Profit year 3	13,500	4,500
Loss year 4	(1,500)	(14,500)
Estimated scrap value end year 4	4,000	4,000

Depreciation is charged on the straight-line basis. The required rate of return is 12%. You are required to evaluate the above two proposals using NPV, IRR methods.

4. What is the different among PV, NPV and XNPV function?