



# 13 EXCEL FUNCTIONS FOR FINANCE PROS



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1

**PV:** Present Value of investment/loan

**PV**(rate, nper, pmt, [fv], [type])

=PV(C4,C5,-C6)		
A	B	C
4	Rate	10%
5	Nper	3
6	PMT	\$2,000.00
7	PV	\$4,973.70

Note:

1. PMT should be negative because it represents an outflow of cash
2. FV, optional argument used for securities with a maturity value
3. Type = 1 assumes payments are made at the beginning of the period

2

**PMT:** Annual payments of an investment/loan

**PMT**(rate, nper, pv, [fv], [type])

=PMT(C4,C5,-C6)		
A	B	C
4	Rate	10%
5	Nper	3
6	PV	\$4,973.70
7	PMT	\$2,000.00

Note:

1. PV should be negative because the loan amount is an outflow of cash
2. FV, the optional argument, is used for securities with a maturity value
3. Type = 1 assumes payments are made at the beginning of the period

3

**NPV:** Net Present Value of Cashflows

**NPV**(rate, value1, [value2],...)

=NPV(F5,C5:C7)-F4					
A	B	C	D	E	F
4	Period	Cashflow	Initial Investment	2,000	
5	1	500	Discount Rate	10%	
6	2	300	NPV	54.85	
7	3	1,800			

Note:

1. Use NPV when CFs vary each period, unlike equal payments in the PV function
2. Initial investment at time 0 is reduced separately, as it doesn't require discounting

Positive NPV implies the project is worth investing.

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**IRR:** Calculate the discount rate at which NPV = 0

**IRR**(values, [guess])

=IRR(C5:C8)		
A	B	C
4	Period	Cashflow
5	0	-2,000
6	1	500
7	2	300
8	3	1,800
9	IRR	11.23%

Note:

1. IRR requires the initial investment as a negative value at time 0
2. Discount rate higher than the IRR will result in negative NPV

=NPV(C9,C6:C8)+C5		
A	B	C
4	Period	Cashflow
5	0	-2,000
6	1	500
7	2	300
8	3	1,800
9	IRR	11.23%
10	NPV	0.00

Verify NPV = 0 using IRR as the discount rate.

Valuation

Date

Essentials

Amortization

Pro Tips

1. For irregular CF dates, use the XNPV & XIRR functions, instead.
2. For varying financing and reinvesting rates, use MIRR function, instead.

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**EOMONTH:** Return the last day of the month

**EOMONTH**(start\_date, months)

=EOMONTH(B4,0)			
A	B	C	D
3	Transaction Date	Month Start	Month End
4	1/4/2024	1/1/2024	1/31/2024
5	6/18/2024	6/1/2024	6/30/2024
6	12/20/2024	12/1/2024	12/31/2024

Note:

1. Months argument accepts both positive & negative values
2. Positive values result in next month, & negative values in previous month
3. To calculate start of the month use the formula EOMONTH(start\_date, -1) + 1

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**EDATE:** Return a date offset by a number of months

**EDATE**(start\_date, months)

=EDATE(B4,C4)			
A	B	C	D
3	Transaction Date	Due in (Months)	Due Date
4	1/4/2024	3	4/4/2024
5	6/18/2024	2	8/18/2024
6	12/20/2024	5	5/20/2025

Months argument accepts both positive & negative values

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**NETWORKDAYS.INTL:** Calculate workdays between two dates

**NETWORKDAYS.INTL**(start\_date, end\_date, [weekend], [holidays])

=NETWORKDAYS.INTL(B5,C5,7,\$F\$4:\$F\$6)					
A	B	C	D	E	F
3	Start Date	End Date	Working Days		Holidays
4	12/5/2024	12/31/2024	17		12/25/2024
5	12/5/2024	1/1/2025	17		12/31/2024
6					1/1/2025

As 1/1/2025 is a holiday, the working days didn't increase

Note:

You can choose the weekend days in your country, for e.g., 7 implies Fri - Sat weekend, instead of the traditional Sat - Sun weekend.

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**WORKDAY.INTL:** Calculate due date, given the start date & business days to skip

**WORKDAY.INTL**(start\_date, end\_date, [weekend], [holidays])

=WORKDAY.INTL(B5,C5,5,\$F\$4:\$F\$6)					
A	B	C	D	E	F
3	Start Date	Business Days	Due Date		Holidays
4	12/5/2024	5	12/10/2024		12/25/2024
5	12/31/2024	10	1/14/2025		12/31/2024
6	1/1/2025	3	1/5/2025		1/1/2025

Note:

Similar to NETWORKDAY.INTL, you can choose your weekend, here 5 implies a Wed-Thurs weekend

Pro Tip

Both NETWORKDAY.INTL & WORKDAY.INTL accept a binary 7-digit '0101000' string, where 0 is working and 1 is not working.

Use them to define custom week structures - such as 0101000 implies non-consecutive non-working days on Tuesdays & Thursdays.

You can also have more than 2 non working days using this method.

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**IFS:** Perform multiple logical tests

**IFS**(logical\_test1, value\_if\_true1, [logical\_test2, value\_if\_true2],...)

=IFS(C4>=100,"High", C4>=50,"Average", C4>=0,"Low", TRUE, "Unprofitable")					
A	B	C	D	E	F
3	Project	NPV \$	Profitability		
4	A	120	High		
5	B	60	Average		
6	C	10	Low		
7	D	(20)	Unprofitable		

Note:

1. You can also use the SWITCH function to achieve the same result
2. IFS is only available for Excel 2019 onward
3. For earlier versions, you could use Nested IFS or INDEX+MATCH

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**INDEX + MATCH:** Powerful combination for flexible lookups

**INDEX**(array, row\_num, [column\_num])

**MATCH**(lookup\_value, lookup\_array, [match\_type])

=INDEX(B4:B6, MATCH(MAX(C4:C6), C4:C6, 0))			
A	B	C	D
3	Project	NPV \$	
4	A	120	
5	B	50	
6	C	200	
7			
8	Best Project	C	

Step by Step

Problem: Lookup the project with highest NPV

Solution:

1. MAX of (C4:C6) calculates the maximum NPV
2. MATCH locates the position of the highest NPV project
3. INDEX then returns the project name at that position.

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**XLOOKUP:** Flexible, bi-directional lookup

**XLOOKUP**(lookup\_value, lookup\_array, return\_array, [if\_not\_found], [match\_mode], [search\_mode])



=XLOOKUP(MAX(C4:C6),C4:C6,B4:B6)				
A	B	C	D	E
3	Project	NPV \$		
4	A	120		
5	B	50		
6	C	200		
7				
8	Best Project	C		

Note:

1. Achieve the same result as INDEX+MATCH, but with a much simpler formula
2. Can lookup in all directions, unlike VLOOKUP
3. Only available for Excel 365 & 2021+