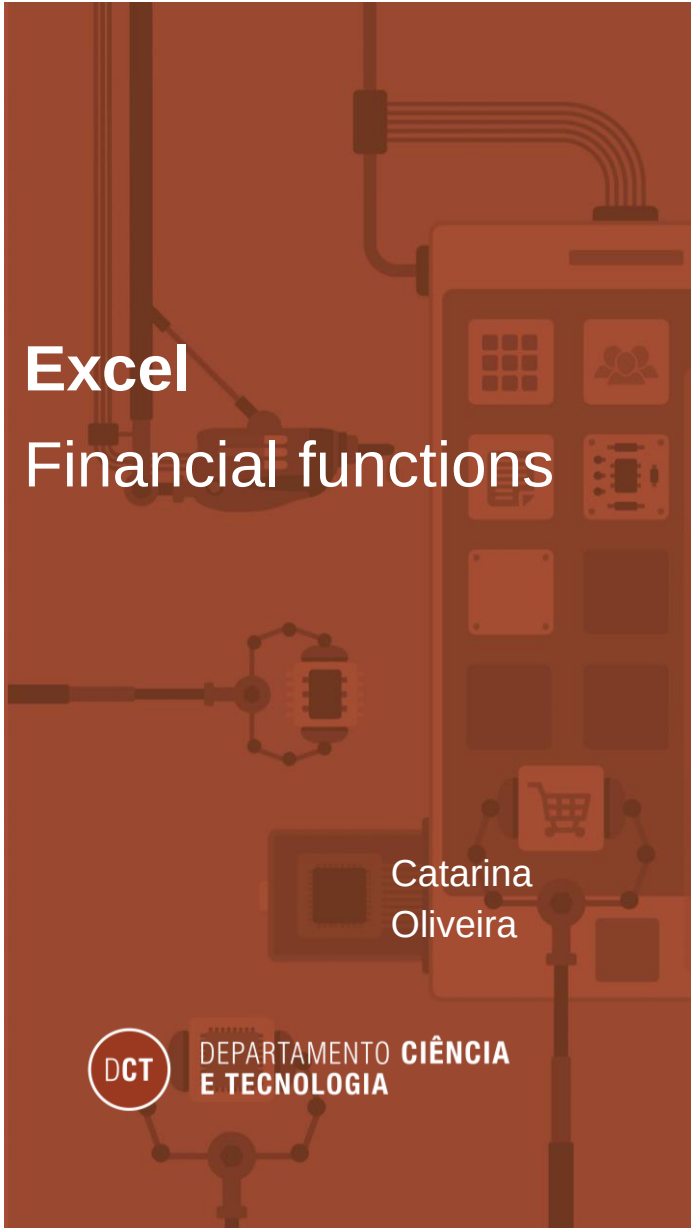

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CONTENT

1. Concepts
2. Rules
3. PV
4. FV
5. RATE
6. NPER
7. PMT

Concepts (1)

Present value

- Principal of an investment or loan. Examples:
    - Term deposit (Investment): initial amount deposited/invested
    - Loan: amount of the loan

Future value

- Final amount of the investment or loan after all the payments. Examples:
    - Investment: at the end of the investment, the sum of the capital and interest accumulated
    - Loan: amount to pay at the end of a certain time (can be 0)

Fixed term

- Total time of the investment or loan

Concepts (2)

Periods

- Units of time in which the investment/loan will be divided. Examples:
    - Monthly
    - Trimestral
    - Semestral
    - Annual

Payment

- Amount paid in each of the periods

Rate

- Interest rate of an investment/loan

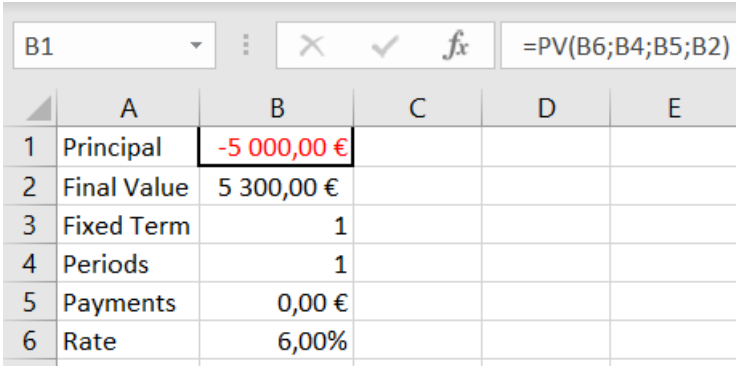
Rules

- Keep consistency on the time units used, especially when specifying:
  - Interest rates
  - Number of periods

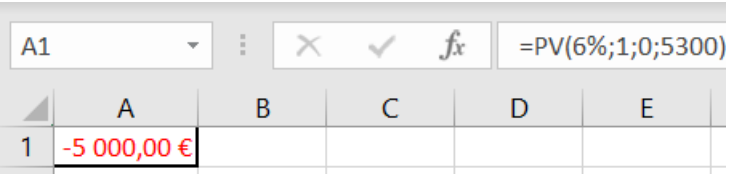
- Use values:
  - Negative – for payments and deposits (cash outflow)
  - Positive – for income and withdrawals (cash inflow)

PV (Present Value)

Obtain the principal of a 1-year investment, with an annual interest rate of 6%, with no additional deposits. The final value of the investment is 5300€



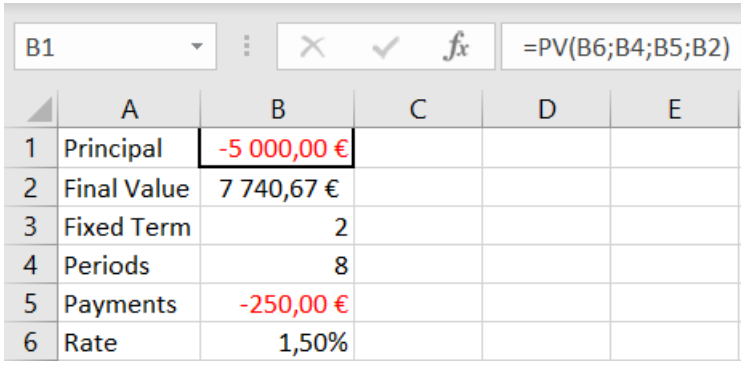
	A	B	C	D	E
1	Principal	-5 000,00 €			
2	Final Value	5 300,00 €			
3	Fixed Term	1			
4	Periods	1			
5	Payments	0,00 €			
6	Rate	6,00%			



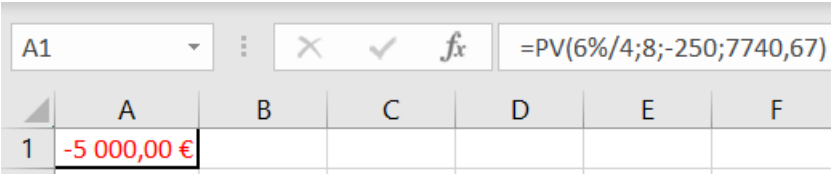
	A	B	C	D	E
1	-5 000,00 €				

PV (Present Value)

Obtain the principal of a 2-year investment, with an annual interest rate of 6% and trimestral deposits of 250€. The final value of the investment is 7740,67€

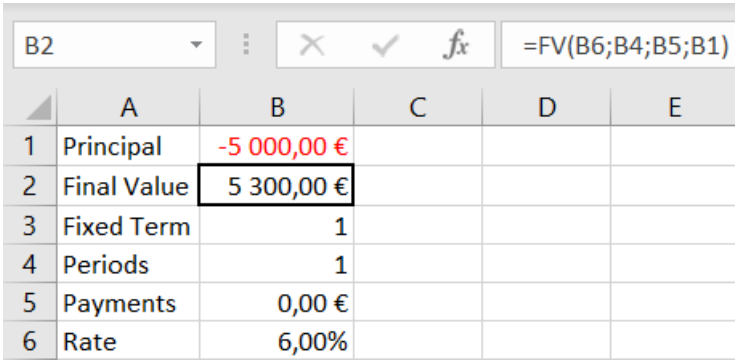


	A	B	C	D	E
1	Principal	-5 000,00 €			
2	Final Value	7 740,67 €			
3	Fixed Term	2			
4	Periods	8			
5	Payments	-250,00 €			
6	Rate	1,50%			

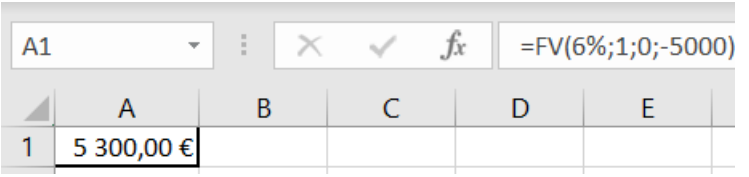


FV (Final Value)

Obtain the final value of a 1-year investment of 5000€, with an annual interest rate of 6% and with no additional deposits.



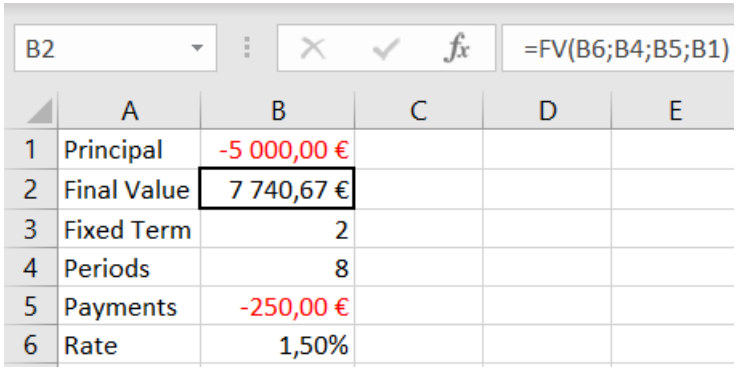
	A	B	C	D	E
1	Principal	-5 000,00 €			
2	Final Value	5 300,00 €			
3	Fixed Term	1			
4	Periods	1			
5	Payments	0,00 €			
6	Rate	6,00%			



	A	B	C	D	E
1	5 300,00 €				

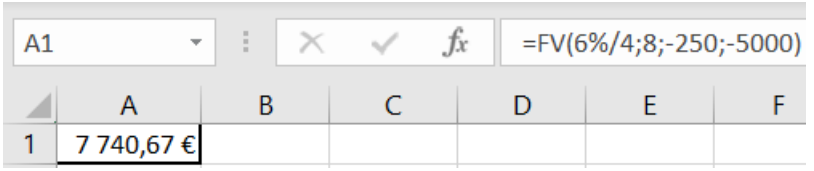
FV (Final value)

Obtain the final value of a 2-year investment of 5000€, with an annual interest rate of 6% and trimestral deposits of 250€.



B2 | =FV(B6;B4;B5;B1)

	A	B	C	D	E
1	Principal	-5 000,00 €			
2	Final Value	7 740,67 €			
3	Fixed Term	2			
4	Periods	8			
5	Payments	-250,00 €			
6	Rate	1,50%			

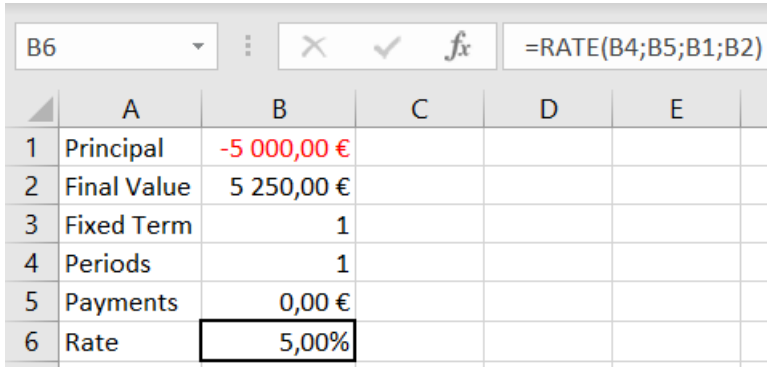


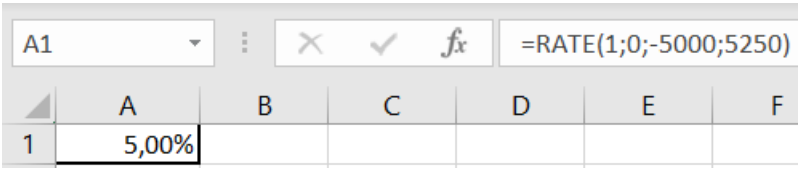
A1 | =FV(6%/4;8;-250;-5000)

	A	B	C	D	E	F
1	7 740,67 €					

RATE

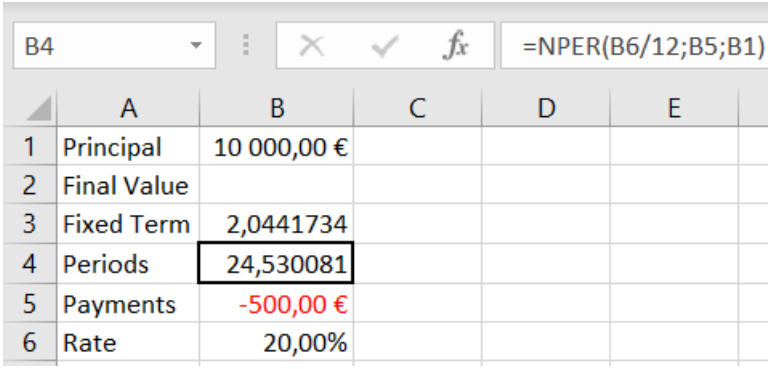
In an investment of 12 months with a principal of 5000€ and a final value of 5250€, if the interest is at the end of the period, what was the interest rate?



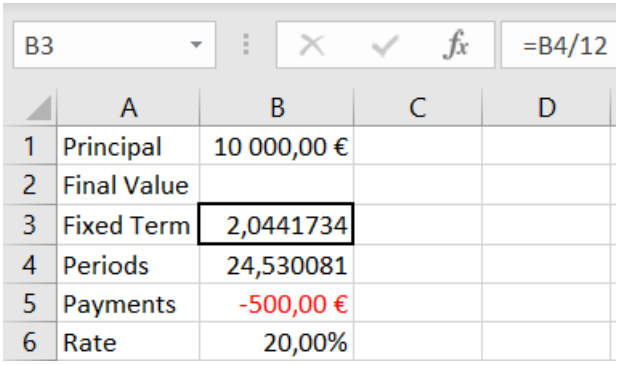


NPER (Number of periods)

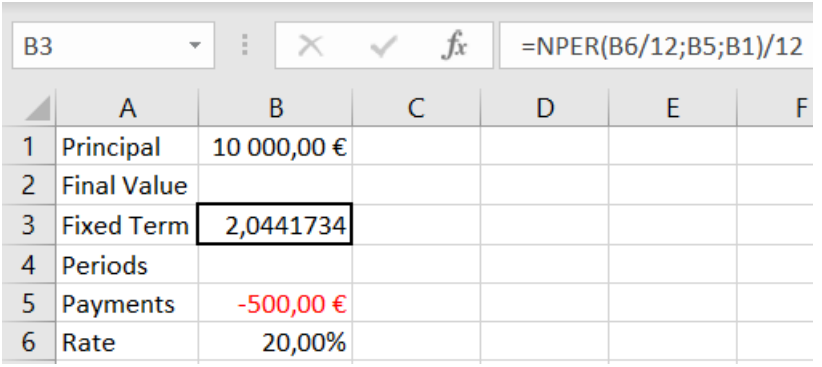
Determine the number of years contracted with a financial institution for a loan of 10000€ with fixed monthly payments of 500€ with a constant annual interest rate of 20%.



	A	B	C	D	E
1	Principal	10 000,00 €			
2	Final Value				
3	Fixed Term	2,0441734			
4	Periods	24,530081			
5	Payments	-500,00 €			
6	Rate	20,00%			



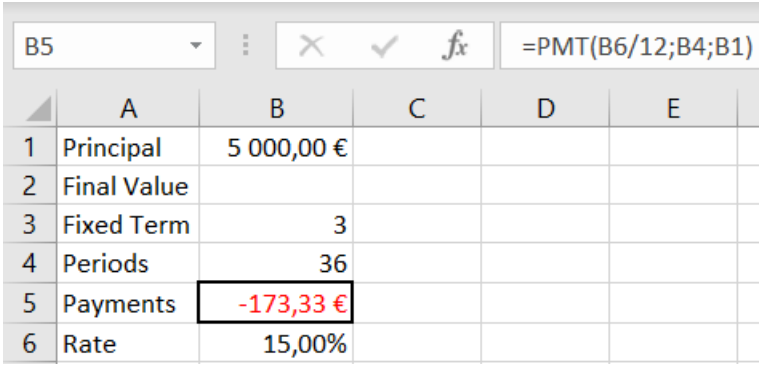
	A	B	C	D
1	Principal	10 000,00 €		
2	Final Value			
3	Fixed Term	2,0441734		
4	Periods	24,530081		
5	Payments	-500,00 €		
6	Rate	20,00%		



	A	B	C	D	E	F
1	Principal	10 000,00 €				
2	Final Value					
3	Fixed Term	2,0441734				
4	Periods					
5	Payments	-500,00 €				
6	Rate	20,00%				

PMT (Payments)

Determine the monthly payments of a 5000€ loan for 3 years with a fixed annual interest rate of 15%.



	A	B	C	D	E
1	Principal	5 000,00 €			
2	Final Value				
3	Fixed Term	3			
4	Periods	36			
5	Payments	-173,33 €			
6	Rate	15,00%			

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Do conhecimento à prática.