

FV, PV of growing annuity

1. What is the present value of your inheritance if your trustee is obliged to pay you an amount of 10% annually starting this year for 10 years, while this year you will be paid 20 thousand USD (right now). We assume alternative costs of 11%.
2. What amount of funds will you dispose of in 2028, if you save 40 thousand CZK and next year by 4% more? While you will stop saving in 2026, the money will be left in your account. Your account bears an interest rate of 6% p.a.
3. You plan to deposit a certain amount into your account every year for 10 years. This year it will be CZK 20 000 and every other year it will be 3% more. How much will you be able to withdraw from your account each year for the next 5 years? The amount will be the same each year and the account bears interest at 3% p.a.
4. After 15 years you want to withdraw 50 thousand CZK each year with a regular increase of 3% for five years. You want to save on that by renting land. How much do you have to ask the tenant if you know that the alternative cost will be 6% ?

Present value of perpetuity and growing perpetuity

1. Calculate the market price of the share if the alternative cost is 5% and this year's dividend is 100 CZK per share. The company's dividend policy is stable.
2. What is the market price of a share if DPS a) was 100 CZK this year; b) will be 100 CZK. Do we expect PCBs to increase by 10% each year and alternative costs of 15%?
3. What is the market price of a share if the dividend per share (DPS) was CZK 100 per share last year? Do we expect PCBs to increase by 10% each year and alternative costs of 15% this year and beyond?
4. The company has decided to pay a dividend of CZK 400 per share next year, with the dividend increasing by 4% per year. What is the current value of dividend income if the interest rate is 14%.
5. What should be the market value of one share of the company, if the expected profit this year is 5 million CZK, the company has 10 thousand of outstanding shares and shareholders will pay 50% of earnings in the form of dividends? The expected annual increase in profit is 5%. The alternative cost is 12%.

Budgeting methods

1. Evaluate the following project using the NPV method when the alternative cost is 5% p.a. :

Cash flows (USD)	C ₀	C ₁	C ₂	C ₃
	- 54,500	25,000	25,000	5,000

2. Evaluate and assess the following projects using the NPV method if you know that the alternative cost is 8%. Please comment on the results.

Year	Project A	Project B
C0		-50,000
C1	-100,000	-50,000
C2	200,000	50,000
C3		50,000
C4		50,000
C5		10,000
C6	200,000	

3. The project requires an investment of CZK 10,000 and will bring CZK 10,700 after a year. Use the IRR method to determine whether you will invest in a project if the interest rate on deposits redeemable at notice is 6% and 9% p.a.

4. Assess the project by the profitability index when alternative costs are 12% p.a. :

Cash flows (GBP)	Project A	Project B
C ₀	- 100 000	- 100 000
C ₁	50 000	27 000
C ₂	40 000	55 000
C ₃	26 000	31 000

5. Consider whether the following 4-year project should be implemented when the cost of capital (discount rate) is 15%. Make a decision based on the Pay Back Period method. Find out the exact maturity. Use the discounted maturity option as well. Please comment on the results.

	C_0	C_1	C_2	C_3	C_4
Cash flows (EUR)	- 6 000	3 000	3 000	3 000	1 000

6. According to the PBP method, evaluate two different projects alternative costs are 12% p.a.

Hotovostní toky	Projekt A	Projekt B
C_0	- 10 000	- 10 000
C_1	5 000	7 000
C_2	4 000	5 000
C_3	6 000	1 000