

a) Annuity and Annuity Payment

1. Calculate the market price of the bond with a nominal value of CZK 10,000, coupon of 10%. Nine years to maturity, coupon payment has not been paid this year. You want a yield of 9%.
2. What is the present value of the receivable, the debtor will pay you 100 thousand CZK for six years? The debtor will start paying after four years. Your money price is 10%.
3. You will deposit CZK 1,500 between 2020 and 2040. The deposit bears 6% p.a. with the interest being credited monthly. How much money will you save during that time?
4. What is the present value of a bond with a maturity of 15 years, with a nominal value of 400 thousand CZK, with a coupon payment of 5%, which you intend to sell for 420 thousand CZK after 10 years? You require a yield of 7% p. a.
5. You want to take a mortgage loan. How high would a 25-year loan be if you were able to repay a maximum of CZK 60,000 per year? The interest rate is 10%.

b) 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%. Annual growth is 4%.
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 5% 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% ?

c) 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? 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%.