



FV and PV of Annuity & Annuity Payment

Ex.1 deferred annuity:

What is the present value of the receivable if the debtor will pay you 15 thousand CZK each year in the years 2021 - 2029. The alternative cost is 6%.

Ex.2 present value of annuity amount - loan, loan, mortgage

How much will you repay the next 20 years if you take a loan of 750 thousand CZK? The loan bears 12% p.a.

1. Consider that at the beginning of each year you will deposit 20,000 CZK on your bank account. (2020 - 2029 included) and you intend to choose savings in 2029. What will you save if the interest rate is 6% p.a.
2. Calculate the market price of the bond with a nominal value of CZK 10,000, coupon of 10%. Five years to maturity, coupon payment has not been paid this year. You want a yield of 9%.
3. You will deposit CZK 1,500 each month 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. Calculate the market value of the bond if nine years remain to maturity, the annual coupon payment has not been paid this year and is 12%. The nominal value of the bond is CZK 10,000. Alternative costs are 8% p.a.
5. In order to continue your studies at the university, you are forced to take a student loan of 70 thousand. CZK interest 11% p.a. Calculate the amount of the installment if you repay once a year for 5 years.
6. 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%.
7. How much will Mr. Zhang have saved in 2040 if he starts to deposit CZK 12,000 at the beginning of each year, at an annual interest rate of 4%, since 2021?
8. How much would Mr. Zhang have to save on a yearly basis to save CZK 1 million at a rate of 3.5% between 2020 and 2040?



9. Mrs. Zhang has CZK 500,000 saved, of which she intends to draw a pension every year for 12 years. How high can an annual income be expected if the interest rate is 8%?
10. 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%.
11. 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.