

2 Zins- und Zinseszinsrechnung

Englische Aufgaben

Remark: You may omit the capital yields tax, unless it is asked for explicitly.
[to omit sth. ... etwas nicht berücksichtigen; capital yields tax ... Kapitalertragsteuer (KEST)]

- 2.1** Mrs. Miller has a seed capital of 5000€.
- Compute the total amount of money Mrs. Miller's capital runs up to, if it is invested for 6 years with an interest rate of 4.3% p.a.
 - After four years the bank cuts interest rates to 3.5%. Calculate the sum Mrs. Miller has to pay additionally at the beginning of the fifth year, in order to get the same amount of money after 6 years she would have before the cut.
 - Calculate the interest rate necessary, if Mrs. Miller wants to command a sum of 7000€ after 6 years.

[seed capital ... Startkapital; to run up to ... anwachsen; interest rate ... Zinssatz; to cut interest rate ... Zinsen senken; to command a sum ... über ein Kapital verfügen]

- 2.2** 6000€ are banked for 5 years, 6 months and 17 days with an interest rate of 3% p.a. Calculate the final value using **a.** theoretical, **b.** practical return and compare the results.

[to bank money ... Geld bei einer Bank anlegen; final value ... Endwert; theoretical/practical return ... theoretische/praktische Verzinsung]

- 2.3** For a capital of 9800€ a bank offers to refund a final value of 10428€ after 5 years.

- Compute the corresponding interest rate.
- Compute the capital necessary to get the final value stated above after 4 years, assuming the same interest rate as before.

[to refund ... zurückzahlen]

- 2.4** A savings account is opened on January, 13th, 2014 at 2.5% interest p.a. Charge interest for year 2014 (practical return, 360 days/year) and compute the available balances at the end of year 2014 after deduction of capital yields tax.

date	deposit/ payout	available balances
13.01.2014	1200	1200
04.05.2014	2300	
30.08.2014	-1000	
30.11.2014	500	

[savings account ... Sparkonto; at x% interest ... zu einem Zinssatz von x%; to charge interest ... Zinsen berechnen; practical return ... praktische Verzinsung; available balance ... Guthaben; deduction ... Abzug; capital yields tax ... Kapitalertragssteuer; deposit ... Einzahlung; payout ... Auszahlung]

- 2.5** Mr. Jones has a principal sum of 5500€ at his disposal and wants to invest it profitably. He compares the proposals of two banks:

Bank 1 offers a nominal interest rate of 4% p.a. with monthly capitalization.

Bank 2 offers a quarterly period interest rate of 1.25% p.q.

- Compute the effective interest rate for both offers and decide, which would be more profitable.

- Compute the final value after 5 years for your chosen offer.

[principal sum ... Anfangskapital; to have sth. at his/her disposal ... etw. zur Verfügung haben; profitably ... gewinnbringend; proposal, offer ... Angebot; nominal interest rate ... Nominalzinssatz; capitalization ... Kapitalisierung; quarterly period interest rate ... Quartalszinssatz; to omit ... nicht berücksichtigen; capital yields tax ... Kapitalertragssteuer; final value ... Endwert]

- 2.6** At the beginning of each month, Stephen pays 250€ into an account with an interest rate of 2.25% p.a.

- Calculate the final value after six years.

- Calculate the sum Stephen would have to pay into a savings account with interest rate 3% p.a., to have the same final value available at the end of the sixth year as with his monthly payments.

[to pay into an account ... auf ein Sparbuch/Sparkonto einzahlen; savings account ... Sparbuch]