SAVING

(Interest period = payment period)

- How much you will have on your saving account in 12 years, if you will regularly save at the beginning of each month 100.00? The annually interest rate is 6 % and the bank calculate the interest every month (Interest period is one month).

$$S = 100 * (1 + \frac{0.06}{12}) * \frac{(1+\frac{0.06}{12})^{(12*12)}-1}{\frac{0.06}{12}}$$

After payment:

$$S = 100 * \frac{(1+\frac{0.06}{12})^{(12*12)}-1}{\frac{0.06}{12}}$$

(Interest period > payment period)

- How much you will have on your saving account in 12 years, if you will regularly save at the beginning of each month 100.00? The annually interest rate is 6 % and the bank calculate the interest once a year (Interest period is one year).

$$S = 100 * 12 * (1 + \frac{12+1}{2*12} * 0.06) * \frac{(1+0.06)^{12}-1}{0.06}$$

After payment:

$$S = 100 * 12 * (1 + \frac{12-1}{2*12} * 0.06) * \frac{(1+0.06)^{12}-1}{0.06}$$

(Interest period < payment period)

- How much you will have on your saving account in 12 years, if you will regularly save at the beginning of a year? The annually interest rate is 6 % and the bank calculate the interest monthly (Interest period is one month).

$$S = 100 * (1 + \frac{0.06}{12})^{12} * \frac{(1+\frac{0.06}{12})^{(12*12)}-1}{(1+\frac{0.06}{12})^{12}-1}$$

After payment:

$$S = 100 * \frac{(1+\frac{0.06}{12})^{(12*12)}-1}{(1+\frac{0.06}{12})^{12}-1}$$

ANNUITY INCOME

(Intrest period = payment period)

- How much do you need to put on your bank account if you like to provide a regularly income at the end of every month in the amount of 500.00 for 17 years? The bank assures you an interest rate of 5 % p. a. (annually interest rate) and the bank calculate the interest every month (Interest period is one month).

$$R = 500 * \frac{1-(\frac{1}{1+\frac{0.05}{12}})^{(12*17)}}{\frac{0.05}{12}}$$

Ahead payment:

$$R = 500 * \frac{1-(\frac{1}{1+\frac{0.05}{12}})^{(12*17)}}{1-\frac{1}{1+\frac{0.05}{12}}}$$

(Intrest period $>$ payment period)

- How much do you need to put on your bank account if you like to provide a regularly income at the end of every month in the amount of 500.00 for 17 years? The bank assures you an interest rate of 5 % p. a. (annually interest rate) and the bank calculates the interest once a year (Interest period is one year).

$$R = 500 * 12 * (1 + \frac{12+1}{2*12} * 0.05) * \frac{1-(\frac{1}{1+0.05})^{17}}{0.05}$$

Ahead payment:

$$R = 500 * 12 * (1 + \frac{12-1}{2*12} * 0.05) * \frac{1-(\frac{1}{1+0.05})^{17}}{0.05}$$

(Intrest period $<$ payment period)

- How much do you need to put on your bank account if you like to provide a regularly income at the end of a year (Payment period is one year, just once a year you will obtain 500.00) in the amount of 500.00 for 17 years? The bank assures you an interest rate of 5 % p. a. (annually interest rate) and the bank calculates the interest every month (Interest period is one month).

$$R = 500 * (\frac{1}{1+\frac{0.05}{12}})^{12} * \frac{1-(\frac{1}{1+\frac{0.05}{12}})^{(12*17)}}{1-(\frac{1}{1+\frac{0.05}{12}})^{12}}$$

Ahead payment:

$$R = 500 * \frac{1-(\frac{1}{1+\frac{0.05}{12}})^{(12*17)}}{1-(\frac{1}{1+\frac{0.05}{12}})^{12}}$$