

MATHEMATIK-PRÜFUNG : ZINSRECHNEN

① $K = 3600.-$
 $p = 4\%$
 $Z = 40.-$

$$t = \frac{Z \cdot 100 \cdot 360}{K \cdot p} = \underline{\underline{100 \text{ d}}}$$

② $Z = 500.-$
 $t = 19 + 6 \cdot 30 + 1 = 200 \text{ d}$
 $p = 3\%$

$$K = \frac{Z \cdot 100 \cdot 360}{p \cdot t} = \underline{\underline{30'000.-}}$$

③ a) $p = 4\%$
 $t = 180 \text{ d}$
 $Z = 200.-$

b) $K = 15'400 - 10'000 = 5'400.-$
 $t = 10 \cdot 30 = 300 \text{ d}$
 $Z = 200.-$

$$K = \frac{Z \cdot 100 \cdot 360}{p \cdot t} = \underline{\underline{10'000.-}}$$

$$p = \frac{Z \cdot 100 \cdot 360}{K \cdot t} = \underline{\underline{4.44\%}}$$

④ $t = 72 \text{ d}$
 $p = 5\%$

$$K + Z = 1414.-$$

$$K + \frac{K \cdot p \cdot t}{100 \cdot 360} = 1414$$

$$K + 0,01 K = 1414$$

$$1,01 K = 1414 \Rightarrow \underline{\underline{K = 1400.-}} \quad \underline{\underline{Z = 14.-}}$$

⑤ a) Normaler Zins : $K = 4800.-$

$$t = 285 \text{ d} + 360 \text{ d} = 645 \text{ d}$$

$$p = 3\%$$

$$Z = \frac{K \cdot p \cdot t}{100 \cdot 360} = 258.- \quad \text{Also : } \underline{\underline{5'058.-}}$$

b) Zinseszins : 1. $K = 4800.-$

$$p = 3\%$$

$$t = 285 \text{ d}$$

$$Z = \frac{K \cdot p \cdot t}{100 \cdot 360} = 114.-$$

2. $K = 4914.-$

$$p = 3\%$$

$$t = 360 \text{ d}$$

$$Z = \frac{K \cdot p}{100} = 147.42 \quad \text{Also : } \underline{\underline{5'069.40}}$$

⑥ $K_1 = x$
 $K_2 = 20'000 - x$
 $p_1 = 5\%$
 $p_2 = 4\%$

$$Z_1 - Z_2 = 80.-$$

$$\frac{x \cdot 5}{100} - \frac{(20000 - x) \cdot 4}{100} = 80 \quad | \cdot 100$$

$$5x - (80000 - 4x) = 8000 \quad | \text{ TU}$$

$$5x - 80000 + 4x = 8000 \quad | \text{ TU } | +80000$$

$$9x = 88000 \quad | : 9$$

$$Z = \frac{K \cdot p}{100}$$

$$K_1 = 9777.80$$

$$K_2 = 10222.20$$

$$\text{Also : } x = 9777.80$$

7) $K = 10'000,-$
 $t = 105 \text{ d}$
 $p = 6\%$

$$Z = \frac{K \cdot p \cdot t}{100 \cdot 360} = 175,- \quad \text{also: } \underline{\underline{\text{Zahlung} = 10'175,-}}$$

8) $K = 15'300,-$
 $t = 8 \cdot 30 = 240 \text{ d}$
 $Z = 586,50$

$$p = \frac{Z \cdot 100 \cdot 360}{K \cdot t} = \underline{\underline{5,75\%}}$$

9) $4'300,- \tilde{A} 3,5\%$
 $6'800,- \tilde{A} 3,25\%$

$$\frac{K_1 \cdot p_1 \cdot t}{100 \cdot 360} + \frac{K_2 \cdot p_2 \cdot t}{100 \cdot 360} = 100,- \quad | \cdot 100 \cdot 360$$

$$\begin{array}{rcl} 4300 \cdot 3,5 \cdot t & + & 6800 \cdot 3,25 \cdot t \\ 15'050 \cdot t & + & 22'100 \cdot t \\ 37'150 t & & \end{array} = \begin{array}{r} 100 \cdot 100 \cdot 360 \\ 3'600'000 \\ 2'600'000 \end{array} \quad \begin{array}{l} | \text{ TU} \\ | \text{ TU} \\ | : 37'150 \end{array}$$

$$t = 96,9 \text{ d} \quad \text{also: } \underline{\underline{97 \text{ Tage}}}$$

10)

$$Z_1 + Z_2 = 300,65$$

$$\frac{K \cdot 4 \cdot 240}{100 \cdot 360} + \frac{K \cdot 3 \cdot 120}{100 \cdot 360} = 300,65 \quad | \cdot 100 \cdot 360$$

$$\begin{array}{rcl} 960 \cdot K & + & 360 \cdot K \\ 1320 \cdot K & & \end{array} = \begin{array}{r} 10'823'400 \\ 10'823'400 \end{array} \quad \begin{array}{l} | \text{ TU} \\ | : 1320 \end{array}$$

$$K = 8199,545 = \underline{\underline{8199,55}}$$

11) a) $K = 250'000,-$
 $p = 5\%$

$$Z = \frac{K \cdot p}{100} = 12'500,- \quad \text{Zahlung nach dem 1. Jan. :}$$

$$\begin{array}{r} 25'000,- \\ - 12'500,- \\ \hline 37'500,- \end{array}$$

b) $K = 225'000,-$
 $p = 5\%$

$$Z = \frac{K \cdot p}{100} = 11'250,- \quad \text{Zahlung nach dem 2. Jan. :}$$

$$\begin{array}{r} 25'000,- \\ - 11'250,- \\ \hline 36'250,- \end{array}$$