

1) a) Einmalig Verz.:

$$C_m = C_0 \cdot (1 + i \cdot m)$$

$$= 100 \cdot (1 + 0,05 \cdot 4) = \underline{\underline{120 \text{ €}}}$$

→ Zinsseszins $C_m = C_0 \cdot (1 + i)^m$

$$= 100 \cdot (1 + 0,05)^4$$
$$= 121,550625 \text{ €}$$

2]

$$C_{m \cdot m} = C_0 \cdot \left(1 + \frac{i}{m}\right)^{m \cdot m} \quad \# \text{ Perioden} \quad \# \text{ Zinsperioden}$$

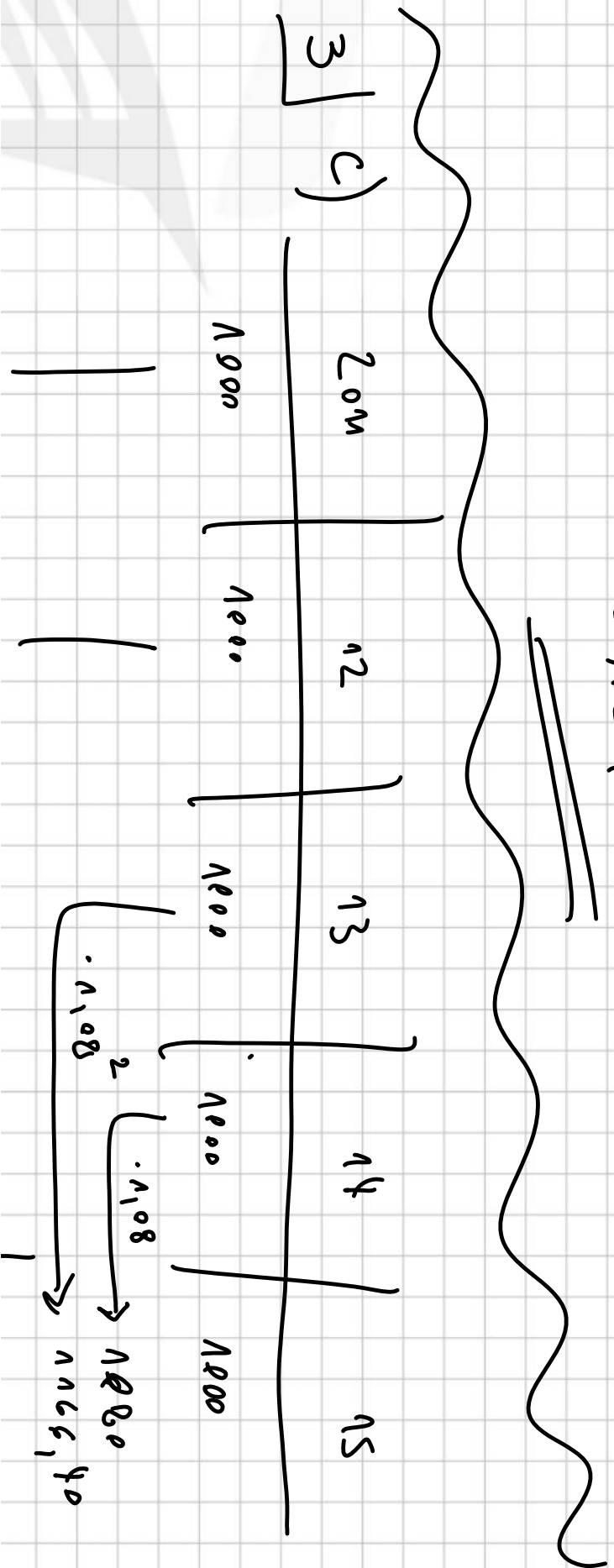
$$a) \quad C_{4 \cdot 2} = C_8 = 100 \cdot \left(1 + \frac{0,05}{2}\right)^{4 \cdot 2} = \underline{\underline{121,8403}}$$

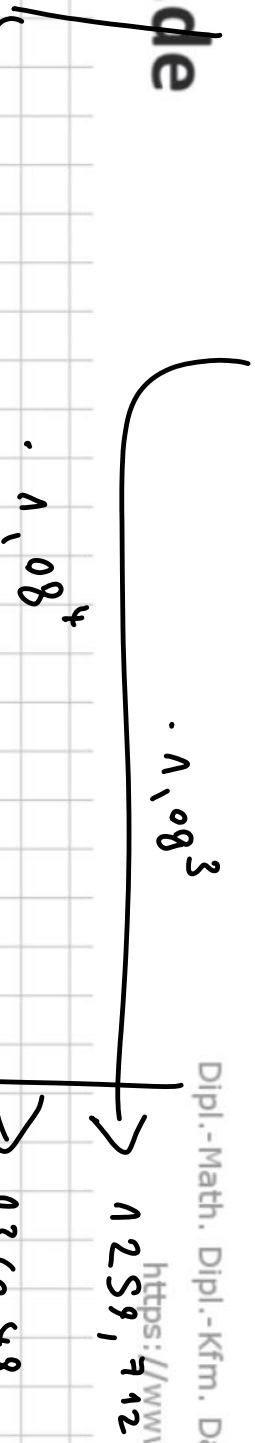
$$K) \quad C_{4 \cdot 4} = C_{16} = 100 \cdot \left(1 + \frac{0,05}{4}\right)^{4 \cdot 4} = \underline{\underline{129,98895}}$$

$$c) \quad \text{STETIGE WERTS} \dots \quad C_n = C_0 \cdot e^{i \cdot n}$$

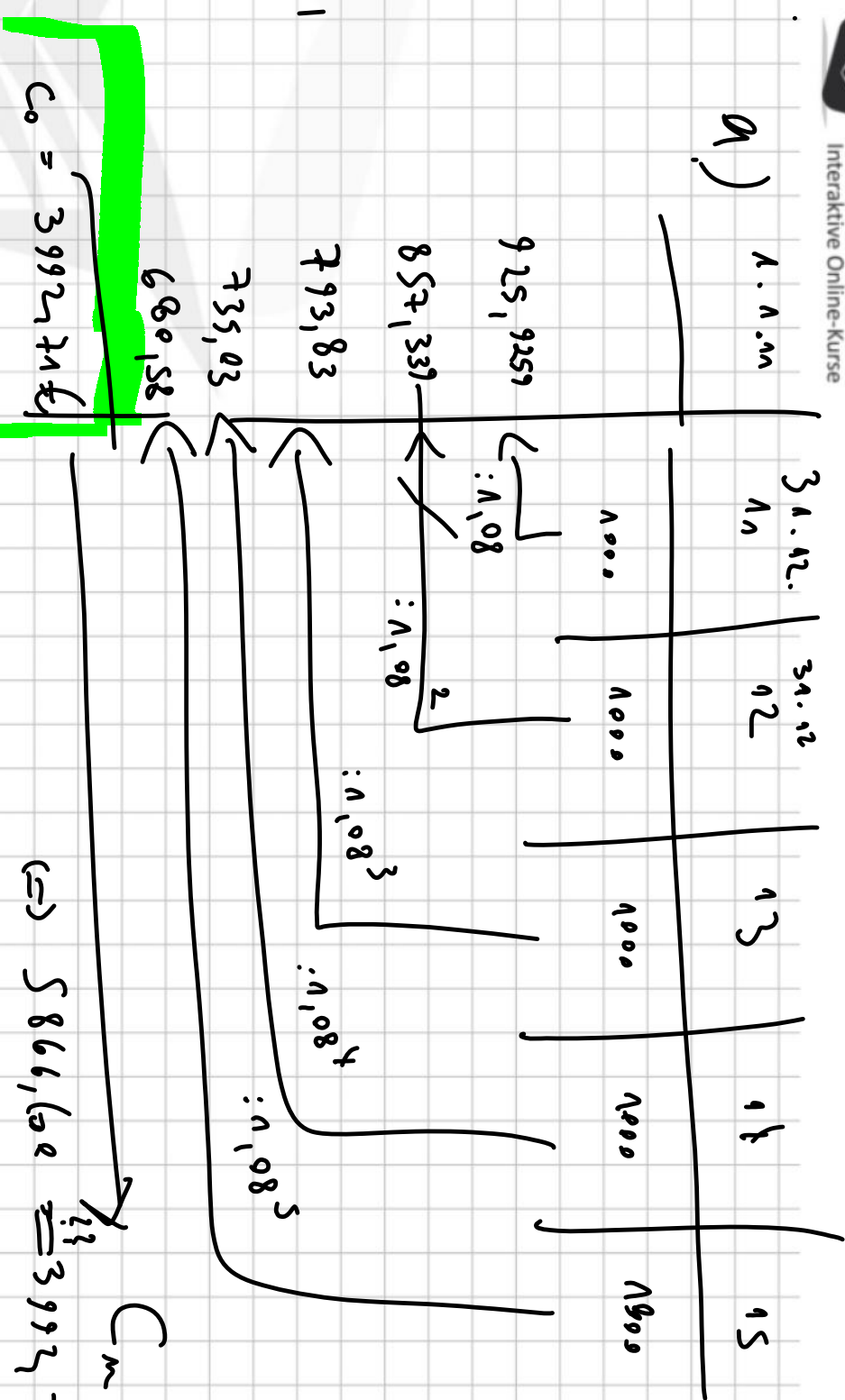
$$C_4 = 100 \cdot e^{0,05 \cdot 4} = 100 \cdot (2,17181 \dots)^2$$

= 122,1403





$$A = C_0 \cdot q^n \cdot \underbrace{\frac{1}{q^n - 1}}_{C_m} \quad (\Leftrightarrow) \quad C_m = A \cdot \frac{q^n - 1}{r} = 1000 \cdot \frac{1,08^5 - 1}{0,08} = 5866,60966\text{€}$$



$$C_m = C_0 \cdot (1+i)^m$$

$$\Leftrightarrow 5866,60 \stackrel{?}{=} 3992,71 \cdot 1,08^5$$

✓

$$C_0 = A \cdot \frac{q^n - 1}{i} \cdot \frac{1}{q^n}$$

$$\approx 1000 \cdot \frac{1,08^5 - 1}{0,08} \cdot \frac{1}{1,08^5}$$
$$= \underline{\underline{3992,71 \text{ €}}}$$

b) $3992,71 \cdot 1,08 = \underline{\underline{4312,13 \text{ €}}}$

$$\sqrt[4]{A = \left(0,9 \cdot 9^m \cdot \frac{1}{9^{m-1}} \right)^{10000} \cdot \frac{0,1}{1,1^{m-1}}} \Leftrightarrow 2000 = 10000 \cdot 1,1^m \cdot \frac{0,1}{1,1^{m-1}}$$

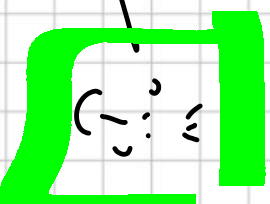
$$\Leftrightarrow \frac{0,1 \cdot 2}{0,1} = \frac{1,1^m}{1,1^{m-1}} \Leftrightarrow 2 \cdot (1,1^m - 1) = 1,1^m$$

$$\Leftrightarrow \underbrace{2}_{2} \cdot 1,1^m - 2 - 1,1^m = 0$$

$$\Leftrightarrow 1,1^m = 2 \Rightarrow m = \frac{\ln 2}{\ln 1,1} = \frac{0,693147}{0,09531} \approx 10,149$$

$Z + T$

	ZINS €	TORGE €	KAP-DIENST €	RESTSCHULD €
1	90	/	90	1000
2	90	/	90	1000
3	90	/	90	1000
4	90	1000	1090	0



h)

RENTNER

$$T_k = \frac{S}{n}$$

	Z	T	KAP. DIENST	RESTSCHAUF
1	90	250	340	750
2	62,50	250	392,50	500
3	45	250	295	250
4	22,5	250	272,5	0

c)

$$A = S \cdot q^n \cdot \frac{K_i}{q^{n-1}}$$

$$= 10000 \cdot 1,09^4 \cdot \frac{0,09}{1,09^4 - 1}$$

$$= 3081,67 \text{ €}$$

	Z	IT	A	RS
1	90 €	218,67 €	308,67 €	784,33 €
2	70,32	238,35	308,67	542,98
3	46,92	259,60	308,67	283,18
4	25,49	283,18	308,67	0

