③ $K = 100\,000$ ден. А.П. → 3 години.

$n = 10$ пор. $m = 1$

$\pi = 4\%$ (р.а-а)

$a_z = ?$

$$s = \frac{100}{100 - \frac{\Pi}{m}} = \frac{100}{100-4} = \frac{100}{96}$$

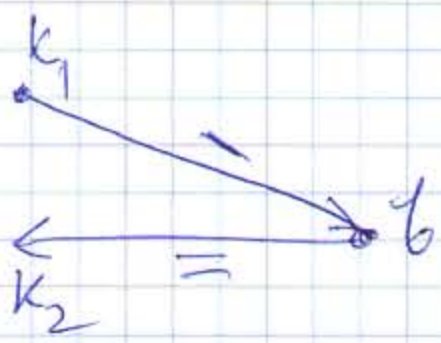
$$s = 1{,}041\,666\,666$$

$$100\,\overline{VI}^{mn}_{\pi/m} = 100 \cdot \overline{VI}^{10}_{4\%} = 11{,}9343362 > 12\% = \pi^*$$

$$100\,\overline{VI}^{mn-1}_{\pi/m} = 100 \cdot \overline{VI}^{9}_{4\%} = 13{,}0095684$$

$$a_z = \frac{K \cdot \pi^*}{100} = \frac{100\,000 \cdot 12}{100} \Rightarrow \boxed{a_z = 12\,000 \text{ ден}}$$

mn	K	i (4%)	b	a
0	100 000	4000	/	/
1	91 666,67	3666,67	8333,33	12000
2	82 986,11	3319,44	8680,56	12000
3	73 943,86	2957,75	9042,25	12000



$$i_0 = \frac{100\,000 \cdot 4}{100} = 4000 \text{ ден} \Rightarrow b_0 = a_z - i_0$$

$$b_0 = 12000 - 4000$$

$$b_0 = 8000 \Rightarrow b_1 = b_0 \cdot s = 8333{,}33$$

$$b_2 = b_1 \cdot s = 8680{,}56$$

$$b_3 = b_2 \cdot s = 9042{,}25$$

④ $K = ?$

$m = 1$

$\pi = 9\%$ (р.а-а)

Доп. ← 2 години

$$R_{mn-1} - R_{mn-4} = 47\,223{,}63$$

$$i_3 = 5132{,}38$$

$$s = \frac{100}{100 - \frac{\Pi}{m}} = \frac{100}{100-9} = \frac{100}{91}$$

$$\boxed{s = 1{,}098\,901\,098}$$

$$R_{mn-s} = a \cdot \left(1 + \overline{IV}^{mn-s-1}_{\pi/m(a)}\right) = a \cdot \frac{s\,[s^{mn-s} - 1)}{s^{mn-s} \cdot (s-1)}$$

$$\frac{100 \cdot i_3}{\pi/m} = R_{mn-3} \Rightarrow R_{mn-3} = \frac{100 \cdot 5132{,}38}{9}$$

$$\boxed{R_{mn-3} = 57026{,}44}$$

$$R_{mn-1} + O_1 = K \Rightarrow R_{mn-1} = K - O_1$$

$$R_{mn-4} = K - O_4$$

$$\Rightarrow R_{mn-1} - R_{mn-4} = (K - O_1) - (K - O_4)$$

$$= O_4 - O_1 = 47223{,}63$$

$$\boxed{O_5 = b_0 \frac{s(s^5-1)}{s-1}} \Rightarrow O_4 - O_1 = 47\,223{,}63$$

$$b_0 \left[\frac{s(s^4-1)}{s-1} - \frac{s(s^3-1)}{s-1}\right] = 47223{,}63$$

$$b_0 \left[\frac{s(s^4-1)}{s-1} - s\right] = 47223{,}63$$

$$b_0 = \frac{47\,223{,}63}{3{,}992\,856\,799} = \boxed{11827{,}03 = b_0} \Rightarrow b_3 = b_0 s^3 = 15694{,}64 \text{ ден} \Rightarrow a = i_3 + b_3$$

$$a = 20827{,}02$$

$$a = b_0 s^{mn}$$

$$1{,}098\,901\,098^{n} = \frac{a}{b_0} = 1{,}760\,968\,179$$

$$n = \frac{\log 1{,}760\,968\,179}{\log 1{,}098\,901\,098} = \boxed{6 \text{ години}}$$

$$K = b_0 s \frac{s^6 - 1}{s-1} = \boxed{100\,000 \text{ ден} = K}$$

mn	K	i (9%)	b	a
5	20 827,02	1874,43	18952,59	20827,02
6	0	0	20 827,02	20827,02