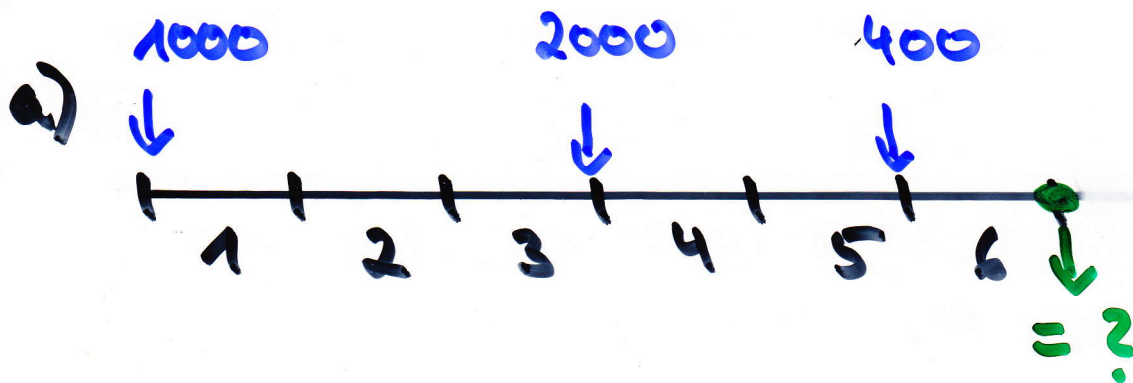
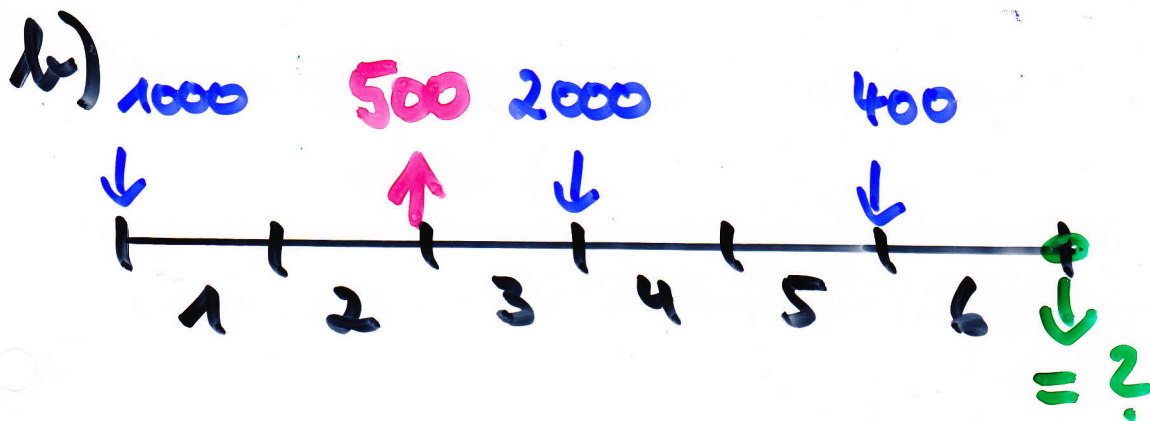


Beispiel 1



$$K_6 = 1000 \cdot 1,08^6 + 2000 \cdot 1,08^3 + 400 \cdot 1,08 = 4538,298$$

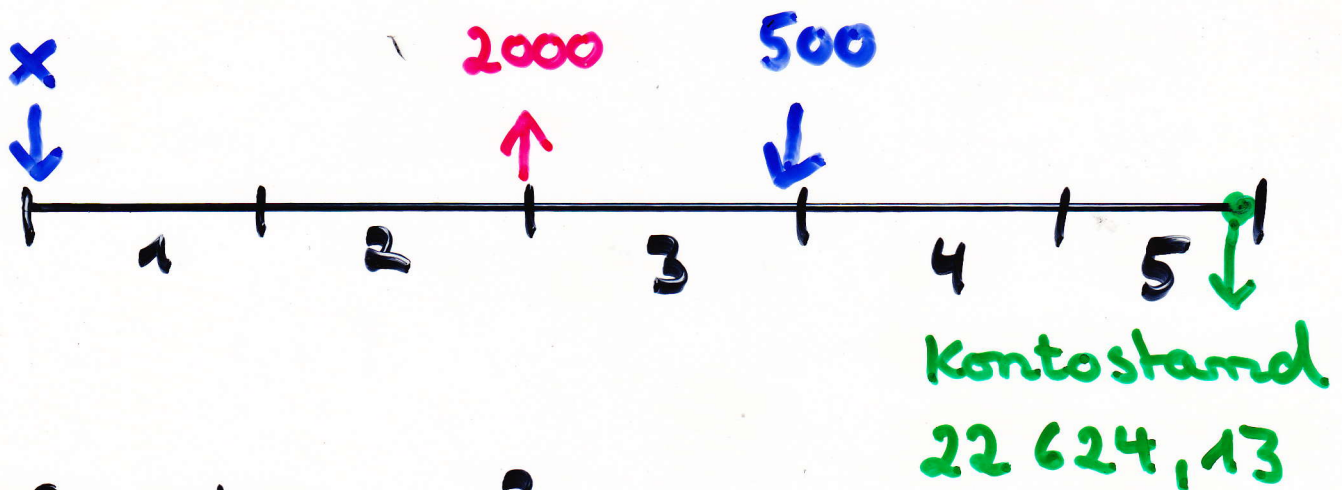


$$K_6 = 1000 \cdot 1,08^6 - 500 \cdot 1,08^4 + 2000 \cdot 1,08^3 + 400 \cdot 1,08 = 3858,054$$

$$K_6 = 4538,298 - 500 \cdot 1,08^4 = 3858,054$$

Aufgabe 2

4% Jahreszins bei nachsch. Verz.



Gesucht: $x = ?$

$$22\,624,13 = x \cdot 1,04^5 - 2000 \cdot 1,04^3 + 500 \cdot 1,04^2$$

$$22\,624,13 = 1,216653x - 1708,928$$

$$24\,333,06 = 1,216653x$$

$$x = 20\,000$$

2. Lösungsweg: Einz. = Rückz.

$$x \cdot 1,04^5 + 500 \cdot 1,04^2 = 2000 \cdot 1,04^3 + 22\,624,13$$

$$1,216653x + 540,8 = 2249,73 + 22\,624,13$$

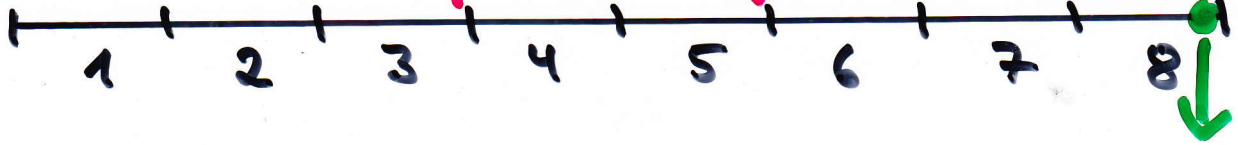
$$1,216653x + 540,8 = 24\,873,86$$

$$1,216653x = 24\,333,06$$

$$x = 20\,000$$

Beispiel 3:

10 000



= 10 150,13

$$10\,000 \cdot 1,05^8 - x \cdot 1,05^5 - x \cdot 1,05^3 =$$

10 150,13

$$14\,774,55 - 1,2763x - 1,1576x = 10\,150,13$$

$$4\,624,42 = 2,4339x$$

$$x = 1900$$

Beispiel 4:

a) 1. Lösungsweg:

$$K_{30} = 10000 \cdot 1,012^{10} \cdot 1,013^{15} \cdot 1,014^5 \\ = 14\,660,09$$

2. Lösungsweg:

$$K_{10} = 10000 \cdot 1,012^{10} = 11\,266,92$$

13000 (pink arrow pointing to K_{25})

$$K_{25} = 11\,266,92 \cdot 1,013^{15} = 13\,675,61$$

$$K_{30} = 13\,675,61 \cdot 1,014^5 = 14\,660,09$$

b)

$$n = \frac{\ln(13000 / 11\,266,92)}{\ln 1,013} = 11,08$$

d.h. nach $10 + 12 = 22$ Jahren

c)

$$q = \sqrt[30]{\frac{14\,660,09}{10000}} = 1,0128331$$

d.h. 1,28331 %