

HEIMADÆMI 1

1.

Bankabók A	Bankabók B
$N = 1 \text{ ár}$	$N = 1 \text{ ár}$
$L = 10\%$	$i = ?$

$$\Rightarrow (1 + 10\% \times 1) = (1 + i)^1$$

$$\Rightarrow 1 + 10\% = 1 + i$$

$$\Rightarrow \underline{i = 10\%}$$

2.

Ár	0	1	2	3	4	5
Flæði	0	0	0	100	0	120

$$F = P(1 + i)^N$$

$$\Rightarrow P = \frac{F}{(1 + i)^N}$$

$$\Rightarrow P = \frac{100}{(1 + 5\%)^3} + \frac{120}{(1 + 5\%)^5}$$

$$\Rightarrow \underline{P = 180,40 \text{ kr}}$$

$$\begin{aligned} F_3 &= 100 \text{ kr} \\ F_5 &= 120 \text{ kr} \\ i &= 5\% \\ N_3 &= 3 \text{ ár} \\ N_5 &= 5 \text{ ár} \\ P &= ? \end{aligned}$$

3.

$$\begin{aligned} F &= 2050 \text{ kr} \\ P &= 500 \text{ kr} \\ N &= 7 \text{ ár} \\ i &= ? \end{aligned}$$

$$2050 = 500 \times (1 + i)^7$$

$$\Rightarrow (1 + i)^7 = \frac{2050}{500}$$

$$\Rightarrow (1 + i)^7 = \frac{41}{10}$$

$$\Rightarrow 1 + i = \sqrt[7]{\frac{41}{10}}$$

$$\Rightarrow i = \sqrt[7]{\frac{41}{10}} - 1$$

$$\Rightarrow i = 0,2233$$

$$\Rightarrow \underline{i = 22,33\%}$$

4.

$$\begin{aligned} P &= 500.000 \text{ kr} \\ i &= 8\% \\ N &= 6 \text{ år} \\ F &= ? \end{aligned}$$

$$a) \quad F = P(1+i)^N$$

$$\Rightarrow F = 500.000 (1+8\%)^6$$

$$\Rightarrow F = \underline{680.244,48 \text{ kr}}$$

$$b) \quad F = P(1+i \cdot N)$$

$$\Rightarrow F = 500.000 (1+8\% \cdot 6)$$

$$\Rightarrow F = \underline{600.000 \text{ kr}}$$

5.

$$\begin{aligned} P &= 100.000 \text{ kr} \\ i &= 24\% \\ N &= 6 \text{ år} \\ m &= 6 \text{ uaxtaftimabil} \\ F &= ? \end{aligned}$$

$$F = P(1 + \frac{i}{m})^{N \times m}$$

$$\Rightarrow F = 100.000 (1 + \frac{24\%}{6})^{6 \times 6}$$

$$\Rightarrow F = \underline{410.393,26 \text{ kr}}$$

6.

$$\begin{aligned} P &= 500 \text{ kr} \\ i &= 12\% \\ N &= 12 \text{ år} \\ F &= ? \end{aligned}$$

$$F = P(1+i)^N$$

$$\Rightarrow F = 500 (1+12\%)^{12}$$

$$\Rightarrow F = \underline{1.220 \text{ kr}}$$