



• **Jednostavni kamatni račun**
dekurzivni

$$C_n = C_0 + n \cdot I = C_0 \cdot \left(1 + \frac{n \cdot p}{100}\right)$$

$$I = \frac{C_0 \cdot n \cdot p}{100}$$

anticipativni

$$C_n = C_0 \cdot \frac{100}{100 - n \cdot q}$$

$$I = \frac{C_n \cdot n \cdot q}{100}$$

• **Kamatne stope**

$$p_r = \frac{p}{m}$$

$$r_k = r^m, p_k = 100 \cdot (r_k - 1)$$

• **Periodične uplate i isplate**

prenumerando

$$A = R \cdot \frac{r^n - 1}{r^{n-1} \cdot (r - 1)}, n = \frac{\log \frac{R \cdot r}{R \cdot r - (r - 1) \cdot A}}{\log r}$$

$$S = R \cdot r \cdot \frac{r^n - 1}{r - 1}, n = \frac{\log \left(\frac{S \cdot (r - 1)}{R \cdot r} + 1 \right)}{\log r}$$

postnumerando

$$A = R \cdot \frac{r^n - 1}{r^n \cdot (r - 1)}, n = \frac{\log \frac{R \cdot r}{R - (r - 1) \cdot A}}{\log r}$$

$$S = R \cdot \frac{r^n - 1}{r - 1}, n = \frac{\log \left(\frac{S \cdot (r - 1)}{R} + 1 \right)}{\log r}$$

• **Složeni kamatni račun**
dekurzivni

$$r = 1 + \frac{p}{100}, r = \sqrt[n]{\frac{C_n}{C_0}}$$

$$C_n = C_0 \cdot r^n$$

$$I = C_n - C_0 = C_0 \cdot (r^n - 1)$$

$$n = \frac{\log C_n - \log C_0}{\log r}$$

anticipativni

$$\rho = \frac{100}{100 - q}, \rho = \sqrt[n]{\frac{C_n}{C_0}}$$

$$C_n = C_0 \cdot \rho^n$$

$$I = C_n - C_0 = C_0 \cdot (\rho^n - 1)$$

$$n = \frac{\log C_n - \log C_0}{\log \rho}$$

• **Zajam**

jednaki anuiteti

$$a = C_0 \cdot \frac{r^n \cdot (r - 1)}{r^n - 1}$$

$$I_k = \frac{C_{k-1} \cdot p}{100}$$

$$R_k = a - I_k$$

$$C_k = C_{k-1} - R_k$$

jednake otplatne kvote

$$R = \frac{C_0}{n}$$

$$I_k = \frac{C_{k-1} \cdot p}{100}$$

$$a_k = I_k - R$$

$$C_k = C_{k-1} - R$$

• **Potrošački kredit**

$$C_1 = C - P$$

$$C_2 = C_1 + I$$

$$P = \frac{C \cdot p}{100}$$

$$k = \frac{(m+1) \cdot q}{24}$$

$$R = \frac{C_2}{m}$$

$$C \cdot \left(1 - \frac{p}{100}\right) \cdot \left(1 + \frac{k}{100}\right) = R \cdot m$$

• **Vječna renta**

$$A = \frac{100 \cdot R}{p}, A_\infty = \frac{R}{r - 1}$$

• **Neprekidno ukamaćivanje**

$$C_n = C_0 \cdot e^{\frac{n \cdot p}{100}}$$

$$C_n = C_0 \cdot e^{\frac{1}{100} \cdot (p_1 + p_2 + \dots + p_n)}$$

unaprijed dogovoreni anuiteti

$$I_k = \frac{C_{k-1} \cdot p}{100}$$

$$R_k = a - I_k$$

$$C_k = C_{k-1} - R_k$$

$$n = \frac{\log a - \log(a - C_0 \cdot (r - 1))}{\log r}$$

$$a'_{n+1} = C_0 \cdot r^{n+1} - a \cdot r \cdot \frac{r^n - 1}{r - 1}$$

različiti anuiteti i različite otplatne kvote

$$I_k = \frac{C_{k-1} \cdot p}{100}$$

$$R_k = a_k - I_k$$

$$C_k = C_{k-1} - R_k$$



Veleučilište Lavoslav Ružička

Gospodarska matematika

Formule za Kolokvij 2