Vorschüssiger Rentenbarwert:

$S_0 = 65.800$

$r = 6.800$

$i = 0{,}02$

$q = 1{,}02$

$$S_0 = r \cdot q \cdot \frac{q^n - 1}{i \cdot q^n}$$

$$65.800 = 6.800 \cdot 1{,}02 \cdot \frac{q^n - 1}{0{,}02 \cdot q^n}$$

$$65.800 - 6.936 \cdot \frac{q^n - 1}{0{,}02 \cdot q^n} \qquad 1 : 6936$$

$$9{,}487 = \frac{q^n - 1}{0{,}02 \cdot q^n} \qquad 1 \cdot 0{,}02$$

$$0{,}1897 = \frac{q^n - 1}{q^n}$$

$$0{,}1897 = \frac{q^n}{q^n} - \frac{1}{q^n}$$

$$0{,}1897 = 1 - \frac{1}{q^n} \qquad | -1$$

$$-0{,}81 = -\frac{1}{q^n} \qquad | \cdot q^n, : (-0{,}81)$$

$$q^n = 1{,}23$$

$$1{,}02^n = 1{,}23 \qquad | \log_{1{,}02}(1{,}23)$$

$$n = 10{,}45$$

$$\approx 10\ 1/2 \text{ Jahre}$$