

Aufgabe 1.67

Gegeben seien folgende Größen:

| | | | | |
|----------|---|----|----|----|
| n | 0 | 1 | 2 | 3 |
| a_n | 9 | 10 | 11 | 12 |
| b_{1n} | 5 | 6 | 7 | 8 |
| b_{2n} | 1 | 2 | 3 | 4 |

Berechnen Sie $\sum_{n=0}^3 a_n$, $\sum_{i=0}^3 (a_i + 1)$, $\sum_{i=0}^2 ia_i$, $\sum_{i=0}^2 a_0$,
 $\prod_{n=0}^3 a_n$, $\prod_{i=0}^2 a_0$, $\sum_{i=1}^2 \sum_{j=0}^3 b_{ij}$ und $\sum_{i=0}^3 \sum_{j=1}^2 b_{ji}$!

Lösung:

$$\sum_{n=0}^3 a_n = 9 + 10 + 11 + 12 = 42, \quad \sum_{i=0}^3 (a_i + 1) = \sum_{i=0}^3 a_i + \sum_{i=0}^3 1 = \sum_{n=0}^3 a_n + 4 = 46,$$

$$\sum_{i=0}^2 ia_i = 0 + 10 + 22 = 32, \quad \sum_{i=0}^2 a_0 = 9 + 9 + 9 = 27,$$

$$\prod_{n=0}^3 a_n = 9 \cdot 10 \cdot 11 \cdot 12 = 11880, \quad \prod_{i=0}^2 a_0 = 9 \cdot 9 \cdot 9 = 729,$$

$$\sum_{i=1}^2 \sum_{j=0}^3 b_{ij} = \sum_{i=1}^2 (b_{i0} + b_{i1} + b_{i2} + b_{i3}) = (b_{10} + b_{11} + b_{12} + b_{13}) + (b_{20} + b_{21} + b_{22} + b_{23}) = 36,$$

$$\sum_{i=0}^3 \sum_{j=1}^2 b_{ji} = \sum_{i=0}^3 (b_{1i} + b_{2i}) = (b_{10} + b_{20}) + (b_{11} + b_{21}) + (b_{12} + b_{22}) + (b_{13} + b_{23}) = 36$$