

Summetegn, 19/8-17.

\mathbb{N} - naturlige tallene

\mathbb{Z} - hele tall

Partall: $\{2, 4, 6, 8, \dots\} = \{2n \mid n \in \mathbb{N}\}$

Summetegn:

$$\sum_{i=1}^{100} i = 1 + 2 + 3 + 4 + \dots + 99 + 100$$

$$\sum_{i=1}^{100} 2i = 2 + 4 + \dots + 200$$

$$\sum_{n=k}^m a_n = a_k + a_{k+1} + a_{k+2} + \dots + a_{m-1} + a_m$$

Egenskaper ved summetegn

$$i) \sum_{n=k}^m a_n + \sum_{n=k}^m b_n = \sum_{n=k}^m (a_n + b_n)$$

$$ii) \sum_{n=k}^m c \cdot a_n = c \sum_{n=k}^m a_n$$

$$iii) \sum_{n=k}^m a_n + \sum_{n=m+1}^p a_n = \sum_{n=k}^p a_n$$

$$\begin{aligned} \rightarrow \sum_{n=k}^m c \cdot a_n &= (c \cdot a_k + c \cdot a_{k+1} + \dots + c \cdot a_{m-1} + c \cdot a_m) \\ &= c (a_k + a_{k+1} + \dots + a_{m-1} + a_m) \\ &= c \sum_{n=k}^m a_n \end{aligned}$$