AM 1 - Análise Matemática

19/03

Contents

Chapter 1

Demonstrações lógicas e matemáticas

$$\sum_{k=1}^{n} 2\,k - 1 = -n + 2\sum_{k=1}^{n} k = -n + 2\left(1 + n\right)\frac{n}{2} = -n + n + n^2 = n^2$$

$$\sum_{k=0}^{n} 1/2^k = 2 - 1/2^n \iff$$

$$\sum_{k=0}^{n} 1/2^k =$$

$$\sum_{k=0}^{n} 1/2^k = 2 - 1/2^n \iff$$

$$n = 0 \implies \sum_{k=0}^{n} 1/2^k = 1 = 2 - 1/2^0$$

$$n = m + 1 \implies \sum_{k=0}^{m+1} 1/2^k = \sum_{k=0}^{m} (1/2^k) + 1/2^{m+1} = 2 - 1/2^m + 1/2^{m+1} = 2 - 1/2^{m+1}$$