Undergrad Complexity: Problem Set 1

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Problem 1 A variadic function $f : \mathbb{N}^* \to \mathbb{N}$ is called a **coding function** if there are "inverse" functions $g : \mathbb{N} \to \mathbb{N}$ and $h : \mathbb{N} \times \mathbb{N} \to \mathbb{N}$ such that:

$$g(f(a_1, \ldots, a_n)) = n$$
$$h(f(a_1, \ldots, a_n), i) = a_i, i \leq i \leq n$$