$$\sum_{k=1}^{k} i = \frac{n^2 + n}{2}$$

This is valid for all $k = x_1, x_2, \ldots, x_k^2$.

$$f(n) = \begin{cases} n/2 & \text{if } n \equiv 0 \\ (3n+1)/2 & \text{if } n \equiv 1. \end{cases}$$