

J. The inequality

$$(n + 1) + (n^4 + 2) + (n^9 + 3) + (n^{16} + 4) + \cdots + (n^{10000} + 100) > k$$

is true for all $n \geq 1$. It follows that

- (a) $k < 1300$,
- (b) $k^2 < 101$,
- (c) $k \geq 101^{10000}$,
- (d) $k < 5150$.