

次の和を求めよ。

$$(1) \sum_{k=1}^{30} k$$

$$(2) \sum_{k=1}^{20} k^2$$

$$(3) \sum_{k=1}^{10} k^3$$

$$(4) \sum_{k=1}^7 3^k$$

$$(5) \sum_{k=1}^n (3k-1)^2$$

$$(6) (1^2) + (1^2 + 3^2) + (1^2 + 3^2 + 5^2) + \dots \\ + (1^2 + 3^2 + 5^2 + \dots + (2n-1)^2)$$

$$(7) \{1 \cdot n\} + \{3 \cdot (n-1)\} + \{5 \cdot (n-2)\} + \dots + \{(2n-1) \cdot 1\}$$