

練習 27 P 86

$$(1) \sum_{k=1}^{15} 2 = 2 \times 15 \\ = 30$$

$$\leftarrow \sum_{k=1}^n C = Cn \quad (\text{証明})$$

$$(2) \sum_{k=1}^{24} k = \frac{1}{2} n(n+1) \\ = \frac{1}{2} \cdot 24 \cdot (24+1) \\ = 12 \cdot 25 \\ = 300$$

$$(3) \sum_{k=1}^{50} k = \frac{1}{2} n(n+1) \\ = \frac{1}{2} \cdot 50 \cdot (50+1) \\ = 25 \times 51 \\ = 1275$$

$$(4) \sum_{k=1}^7 k^2 = \frac{1}{6} n(n+1)(2n+1) \\ = \frac{1}{6} \cdot 7 \cdot (7+1)(2 \cdot 7+1) \\ = \frac{1}{6} \cdot 7 \cdot 8 \cdot 15 \\ = \frac{1}{\cancel{2}} \cdot 7 \cdot \frac{8}{\cancel{4}} \cdot \cancel{15} 5 \\ = 7 \cdot 4 \cdot 5 \\ = 7 \cdot 20 \\ = 140$$

$$(5) \sum_{k=1}^{12} k^2 = \frac{1}{6} n(n+1)(2n+1) \\ = \frac{1}{6} \cdot 12 \cdot (12+1)(2 \cdot 12+1) \\ = \frac{1}{6} \cdot 12 \cdot 13 \cdot 25 \\ = 2 \cdot 13 \cdot 25 \\ = 50 \cdot 13 \\ = 650$$