

9 等比数列の和 $2 - 6 + 18 - 54 + \dots - 4374$ を答えよ。[問 1.9(3)] -3280

10 次の和を求めよ。

(1) $S_n = 1 \cdot 1 - 3 \cdot 3 + 5 \cdot 9 - 7 \cdot 27 + 9 \cdot 81 + \dots + (2n-1) \cdot (-3)^{n-1}$ [※解答は脚注]

(2) $\sum_{k=1}^n \frac{1}{\sqrt{k+1} + \sqrt{k}} = \frac{1}{\sqrt{2} + \sqrt{1}} + \frac{1}{\sqrt{3} + \sqrt{2}} + \frac{1}{\sqrt{4} + \sqrt{3}} + \dots + \frac{1}{\sqrt{n+1} + \sqrt{n}}$ $\sqrt{n+1} - 1$

$$(1) S_n = \frac{1}{1 - (-3)} \left[(1-2) + 2 \cdot \frac{1-X}{1-(-3)} - (2n-1)X \right] = \frac{-1 - (4n-1)X}{8} = \frac{-1 - (4n-1) \cdot (-3)^n}{8}$$