

数学演習 24 platex + emath

1 次の漸化式を解け。

$$(1) \quad a_{n+1} = 3a_n + 5, \quad a_1 = 2$$

$$(2) \quad a_{n+2} - 6a_{n+1} + 9a_n = 0, \quad a_1 = 3, \quad a_2 = 5$$

$$\text{Ans. } a(n) = \frac{3^{n+1} - 5}{2}$$

$$\text{Ans. } a(n) = -(4 \cdot n - 13) \cdot 3^{n-2}$$

2 次の漸化式を解け。

$$(1) \quad a_{n+1} = -2a_n + 3^n, \quad a_1 = 1$$

$$(2) \quad a_{n+1} = \frac{1}{2 - a_n}, \quad a_1 = \frac{1}{2}$$

$$\text{Ans. } a(n) = \frac{3^n - (-2)^n}{5}$$

$$\text{Ans. } a(n) = \frac{n}{n+1}$$

$$(3) \quad na_{n+1} = (n+1)a_n + 1, \quad a_1 = 1$$

$$(4) \quad a_{n+1} = \frac{4a_n + 1}{2a_n + 3}, \quad a_1 = 2$$

$$\text{Ans. } a(n) = 2 \cdot n - 1$$

$$\text{Ans. } a(n) = \frac{2 \cdot 5^n + 2^n}{2 \cdot 5^n - 2^{n+1}}$$