

数学演習 23

□1 次の漸化式を解け。

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

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

$$\text{Ans. } a(n) = \frac{1}{3 \cdot n + 1}$$

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

□2 次の漸化式を解け。

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

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

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

$$\text{Ans. } a(n) = \frac{-15 \cdot 2^{n+1} + 7 \cdot 3^n + 18 \cdot n + 27}{6}$$