

練習 34

(2)

$$\begin{aligned} a_{n+1} &= (1-p)(a_n + b_n) \\ &= (1-p)(1-c_n) \end{aligned}$$

$$\begin{aligned} c_n &= p(b_{n-1} + c_{n-1}) \\ &= p(1-a_{n-1}) \end{aligned}$$

より,

$$\begin{aligned} a_{n+1} &= (1-p)(1-c_n) \\ &= (1-p)\{1-p(1-a_{n-1})\} \\ &= (1-p)\{(1-p) + pa_{n-1}\} \\ &= (1-p)^2 + p(1-p)a_{n-1} \end{aligned}$$

$$\therefore a_{n+1} - p(1-p)a_{n-1} = (1-p)^2$$

$$\text{ゆえに, } \alpha = 0, \beta = -p(1-p), \gamma = (1-p)^2$$