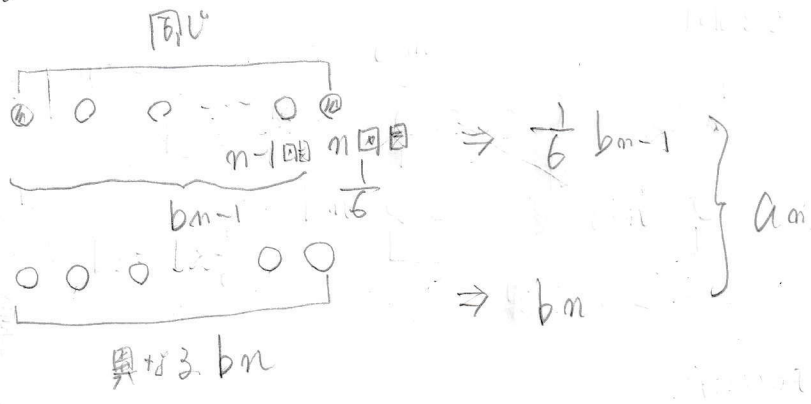


1) $\square \square \square \square$ $m \square$
 $\circ \circ \circ \circ$ $\frac{5}{6}$ \dots \circ
 1 $\frac{5}{6}$ $\frac{5}{6}$

$$1 \times \frac{5}{6} \times \frac{5}{6} \dots \frac{5}{6} = \left(\frac{5}{6}\right)^{m-1} \quad \left(\frac{5}{6}\right)^{m-1}$$

2) $a_2 = b_2 = \frac{5}{6}$
 $n \geq 3$ とき



$$a_n = b_n + \frac{1}{6} b_{n-1} \quad (n \geq 3)$$

3) (1), (2) より $b_2 = \frac{5}{6}$
 $b_n + \frac{1}{6} b_{n-1} = \left(\frac{5}{6}\right)^{n-1}$

両辺に $\left(\frac{5}{6}\right)^n$ をかけると

$$\left(\frac{6}{5}\right)^n b_n + \frac{1}{6} \left(\frac{6}{5}\right)^n b_{n-1} = \left(\frac{5}{6}\right)^n \cdot \left(\frac{6}{5}\right)^n \cdot \left(\frac{5}{6}\right)^{-1}$$

$$\left(\frac{6}{5}\right)^n b_n + \frac{1}{6} \left(\frac{6}{5}\right)^{n-1} b_{n-1} = \frac{6}{5}$$

$$\left(\frac{6}{5}\right)^n b_n = c_n \text{ とおくと } n \geq 2$$

$$c_n + \frac{1}{5} c_{n-1} = \frac{6}{5}$$

$$c_n + d = -\frac{1}{5} (c_{n-1} + d) \text{ とおくと } d = -1 \text{ あり}$$

$$c_n - 1 = -\frac{1}{5} (c_{n-1} - 1)$$

c_{n-1} は 初項 $c_2 - 1 = \frac{6}{5} - 1 = \frac{1}{5}$, 公比 $-\frac{1}{5}$ の等比数列

$$c_n - 1 = \frac{1}{5} \left(-\frac{1}{5}\right)^{n-2} \rightarrow c_{n-1} = -\left(-\frac{1}{5}\right) \left(-\frac{1}{5}\right)^{n-2} \rightarrow c_n = 1 - \left(-\frac{1}{5}\right)^{n-1}$$

$$\left(\frac{6}{5}\right)^n b_n = 1 - \left(-\frac{1}{5}\right)^{n-1} | \int$$

$$b_n = \left(\frac{5}{6}\right)^n - 5 \left(-\frac{1}{6}\right)^n \quad (n \geq 2)$$

とあり