

Hw11)

$$x_n = \frac{x(n-1) + a \cdot x(n-2)}{b \cdot x(n-1) + x(n-2)}$$

$$x = \frac{x + ax}{bx + x} = \frac{x(1+a)}{x(1+b)}$$

$$x = \frac{1+a}{1+b} \quad f'(x) = \frac{a+1}{bx+x} - \frac{(b+1)(ax+x)}{(bx+x)^2}$$

$$(a, b) \rightarrow (1, 1) \quad x(1, 1) = \frac{2}{2} = 1 \quad f'(1) = \frac{1+1}{1+1} - \frac{(2)(2)}{(2)^2} = 1 - 1 = 0$$

$$\rightarrow (2, 1) \quad x(2, 1) = \frac{3}{2} \quad f'(\frac{3}{2}) = 0$$

$$\rightarrow (3, 1) \quad x(3, 1) = 2 \quad f'(2) = 0$$

$$\rightarrow (4, 1) \quad x(4, 1) = \frac{5}{2} \quad f'(\frac{5}{2}) = 0$$

$$\rightarrow (1, 2) \quad x(1, 2) = \frac{2}{3} \quad f'(\frac{2}{3}) = 0$$

$$\rightarrow (2, 2) \quad x(2, 2) = 1$$

$$\rightarrow (3, 2) \quad x(3, 2) = \frac{4}{3}$$

$$\rightarrow (4, 2) \quad x(4, 2) = \frac{5}{3}$$

$$\rightarrow (1, 3) \quad x(1, 3) = \frac{1}{2}$$

$$\rightarrow (2, 3) \quad x(2, 3) = \frac{3}{4}$$

$$\rightarrow (3, 3) \quad x(3, 3) = 1$$

$$\rightarrow (4, 3) \quad x(4, 3) = \frac{5}{4}$$

$$\rightarrow (1, 4) \quad x(1, 4) = \frac{2}{5}$$

$$\rightarrow (2, 4) \quad x(2, 4) = \frac{3}{5}$$

$$\rightarrow (3, 4) \quad x(3, 4) = \frac{4}{5}$$

$$\rightarrow (4, 4) \quad x(4, 4) = 1$$