

HW 11

① ✓

② $z = \frac{1+2z+3z+4z}{2+3z+4z+5z} \Rightarrow z(2+12z) = 1+9z \Rightarrow 12z^2+2z-9z-1=0$

$$z = \frac{7+\sqrt{97}}{24} \quad 1 \quad \frac{7-\sqrt{97}}{24}$$

③ $x(n) = [a(n+2), a(n+1), a(n)] \quad x(n+1) = F(x(n))$

$$[x_1, x_2, x_3] \rightarrow \left[\frac{1+2x_1+3x_2+4x_3}{2+3x_1+4x_2+5x_3}, x_1, x_2 \right]$$

④ $z = \frac{5+r \pm \sqrt{r^2+10r+1}}{12} \quad r_0 \approx 4$

⑤ i) $r_1 \approx 5.4$

ii) $r_2 \approx 5.53$

iii) $r_3 \approx 5.564$