

MATH 336 - HW #12

1.

$$\text{ultimate period of } d(n+1) = \frac{(1-d(n))(2-d(n))(3-d(n))}{12} = 1$$

$$r_1 \approx 10$$

$$r_2 \approx 4$$

$$r_3 \approx 2.5$$

$$r_4 \approx 2.48418474602$$

2.

$$T_1 = \left[\frac{27+11x+25y}{20+80x+14y}, \frac{13+12x+9y}{18+21x+5y} \right]$$

$$T_2 = \left[\frac{14+30x+20y}{16+24x+19y}, \frac{3+9x+13y}{3+8x+7y} \right]$$

$$T_3 = \left[\frac{11+11x+30y}{16+8x+20y}, \frac{24+16x+11y}{23+9x+28y} \right]$$

$$T_4 = \left[\frac{23+13x+8y}{17+6x+20y}, \frac{17+23x+2y}{25+21x+9y} \right]$$

$$T_5 = \left[\frac{29+11x+20y}{35+23x+8y}, \frac{9+17x+26y}{18+11x+20y} \right]$$

3. $T_1 = \left[\frac{8+7x+y+2z}{4+2x+2y+3z}, \frac{2+4x+4y+10z}{4+4x+7y+5z}, \frac{1+5x+6y+3z}{8+9x+9y+5z} \right]$

$$T_2 = \left[\frac{1+6x+10y+9z}{1+3x+5y+10z}, \frac{3+5x+9y+5z}{1+3x+2y+8z}, \frac{6+2x+8y+5z}{9+x+2y+10z} \right]$$

$$T_3 = \left[\frac{10+9x+6y+6z}{10+9x+4y+9z}, \frac{8+8x+7y+6z}{8+9x+8y+z}, \frac{4+8x+y+6z}{3+10x+9y+4z} \right]$$

$$T_4 = \left[\frac{4+3x+10y+10z}{9+2x+9y+4z}, \frac{2+8x+4y+8z}{9+4x+1y+5z}, \frac{1+2x+9y+9z}{4+2x+6y+7z} \right]$$

$$T_5 = \left[\frac{5+7x+9y+z}{9+3x+8y+5z}, \frac{2+5x+10y+z}{9+10x+8y+8z}, \frac{2+4x+3y+10z}{4+6x+9y+4z} \right]$$

$$T_6 = \left[\frac{2+10x+2y+3z}{3+4x+14y+6z}, \frac{7+5x+2y+10z}{5+2x+10y+3z}, \frac{6+5x+9y+z}{4+10x+3y+4z} \right]$$

$$T7 = \left[\frac{5+5x+2y+4z}{9+10x+3y+7z}, \frac{1+4x+9y+5z}{9+10x+7y+9z}, \frac{6+x+5y+2z}{1+3x+3y+10z} \right]$$

$$T8 = \left[\frac{3+2x+9y+9z}{1+3x+10y+2z}, \frac{9+x+2y+8z}{7+x+y+9z}, \frac{2+2x+5y+3z}{1+4x+y+10z} \right]$$