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Module 3 Homework

May 19, 2023

5.4 - 5

$$x_{n+2} = c_0x_n + c_1x_{n+1} \pmod{3}$$

this gives:

$$1, 1, 0, 2, 2, 0, 1, 1$$

n	x_n	x_{n+1}	x_{n+2}	Equation
0	1	1	0	$0 = c_0(1) + c_1(1) \pmod{3}$
1	1	0	2	$2 = c_0(1) + c_1(0) \pmod{3}$

$$c_0 + c_1 \equiv 0 \pmod{3}$$

$$c_0 \equiv 2 \pmod{3}$$

So,

$$c_0 = 2$$

Substitute,

$$2 + c_1 \equiv 0 \pmod{3} \Rightarrow c_1 \equiv -2 \equiv 1 \pmod{3}$$

$$c_0 = 2, \quad c_1 = 1 \pmod{3}$$

6.6 - 2

6.6 - 6

6.6 - 8