

Real Quiz 1 of Dr. Z.'s Dynamical Models in Biology class

Name: (print!)

Email: (print!)

1. (3 points) Compute $x(4)$ of the sequence satisfying the recurrence equation

$$x(n) = 4x(n-1) - 5x(n-2) + x(n-3) \quad , n \geq 3$$

subject to the initial conditions

$$x(0) = 1 \quad , \quad x(1) = 1 \quad , \quad x(2) = 1 \quad .$$

2. (7 points) Solve explicitly the differential equation

$$y''(x) - 4y(x) = 0 \quad .$$

with initial conditions

$$y(0) = 2 \quad , \quad y'(0) = 0 \quad .$$