1. Find the solution of the recursion relation

\[ x_{n+2} - 2x_{n+1} + 2x_n = 0 \]

with initial conditions \( x_0 = 1 \) and \( x_1 = 1 \) (by hand).

2. Using MATLAB/Octave or otherwise, find \( x_{30} \), \( x_{31} \) and \( x_{32} \) for the recursion relation defined by \( x_0 = 0 \), \( x_1 = 1 \) and \( x_2 = 2 \) and

\[ x_{n+1} = x_n - 2x_{n-1} + x_{n-2} \]