1. Do problems from chapter 7: 37, 42, 45, 46, 48

2. Solve \( h_n = -4h_{n-1} - 5n_{n-2} - 2h_{n-3} + 2^n, \) \( h_0 = 1, \ h_1 = 1, \ h_2 = 2. \) For goodness sake use calculation aids. A useful WolframAlpha command is Apart as in 'Apart[\(x/((x+1)(x+2))\)]'

3. Solve \( h_n = -4h_{n-1} - 5h_{n-2} - 2h_{n-3} + a^n, \) \( h_0 = 1, \ h_1 = 1, \ h_2 = 2 \) for all possible \( a. \) For goodness sake use calculation aids.

The grader will pay special attention to 45 and 48f, so you should write these up more carefully. Don’t just give an answer, but explain.