Problem 1: Ex 10.12, Page 66

Problem 2: Consider the sequence \( \{a_n\}_{n \in \mathbb{N}} \) defined by
\[
a_0 := 1 \land a_1 := 1 \land (\forall n \in \mathbb{N}: a_{n+2} := 2a_n + a_{n+1})
\]
Prove that \( \lim_{n \to \infty} \frac{a_{n+1}}{a_n} \) exists and identify its value.

Problem 3: Ex 11.6, Page 77

Problem 4: Ex 11.10, Page 77

Problem 5: Ex 11.7, Page 77

Problem 6: Ex 12.4, Page 82

Problem 7: Ex 12.8, Page 82

Problem 8: Ex 12.10, Page 83

Problem 9: Ex 12.14(A), Page 83