

ECE 534 FA26 HW3

October 6, 2026

Problem 1. Problem 2.19, Prof. Hajek's lecture notes.

Problem 2. Problem 2.20, Prof. Hajek's lecture notes.

Problem 3. Problem 2.21, Prof. Hajek's lecture notes.

Problem 4. Problem 2.25, Prof. Hajek's lecture notes. In the problem description, the noise variables should start at index 0 (i.e. we consider $(W_0, W_1, W_2, \dots)$ to be a sequence of i.i.d. $N(0, 0.5)$ random variables), or otherwise the recurrence relation $X_{k+1} = X_k^2 + W_k$ is ill-defined when $k = 0$.

Problem 5. Problem 2.29, Prof. Hajek's lecture notes.