

1. Problem 22.3-7 (page 548).
2. Problem 22.3-8 (page 548).
3. Problem 22.3-10 (page 549).
4. Problem 22.4-3 (page 552).
5. Count *exactly* the number of multiplications needed by Strassen's algorithm for multiplying two 4×4 matrices.
6. Let $\omega = i$ (a primitive fourth root of unity). Write down the inverse of the matrix V_ω , where the (i, j) -th element of V_ω is ω^{ij} , $0 \leq i, j \leq 3$.
7. Multiply the two polynomials, $A = 1 + 3X$ and $B = 1 - 2X$ using FFT. Show all your work.
8. Explain clearly steps 11-13 in the Recursive-FFT algorithm on page 835.