Exercises on complex matrices; fast Fourier transform

Problem 26.1: Compute the matrix *F*₂.

Problem 26.2: Find the matrices *D* and *P* used in the factorization:

$$F_4 = \left[\begin{array}{cc} I & D \\ I & -D \end{array} \right] \left[\begin{array}{cc} F_2 \\ F_2 \end{array} \right] P$$

Hint: *D* is created using fourth roots, not square roots, of 1. Check your answer by multiplying.

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