Transform Methods & Signal Processing
Class Exercise 6: before lecture Monday 26th October

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1. 6 marks Imagine that we pass white noise, with mean μ, and variance σ^2 through a FIR filter with coefficients $w = (1, 2, 3, 2, 1)$, describe the resulting signal sufficiently detail to completely characterise it.

2. 4 marks For the problems from class exercise 3, question 1, show that the Parseval-Rayleigh theorem holds.

NB: consult solutions (from the web page) if you can't remember the FTs.

3. 2 marks Use Raleigh's theorem to prove that the integral (from $-\infty$ to ∞) of a normalized sinc function squared is one.

4. 3 marks Draw the real and complex parts of the DFT basis functions for $N = 4$.