

312. Homework 6

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Due: Thursday, March 18, 2004

PROBLEM 1: Hermite functions.

- (i) Using the generating function for the Hermite functions, show the Rodrigues representation of $H_n(x)$:

$$H_n(x) = (-1)^n e^{x^2} \frac{d^n}{dx^n} (e^{-x^2}) .$$

- (ii) In Arfken and Weber, do problems 13.1.1, 13.1.16, and 13.1.18.

PROBLEM 2: Laguerre functions. In Arfken and Weber, do problems 13.2.3, 13.2.8, 13.2.9, and 13.2.10.