Math Methods (PHYS 320):14

Spring 2017

Reading: About your special function.

(1) Use the Rodrigues formula for Hermite polynominals to show that
   (a) $H_n(x)$ is an even function for even n and odd function for odd n.
   (b) and
$$H_{n+1}(x) - 2xH_n(x) + H_n'(x) = 0.$$

(2) From $F = ma$ derive the wave equation for waves on a string. For a review see your 195 text.

(3) By any method you wish find the first 3 zeros for $J_1(x)$ and $J_{17}(x)$. (Mathematica eats these up with BesselJZero[n,k].)