Phys 651 Fall 2023

Worksheet #19

(Monday, November 20, 2023)

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Nai	ne
Questions (5 pts):	
the equation	nsider the Schroedinger equation for a 1D harmonic oscillator. Without solving in, try to extract as much information about allowed energies and ing wavefunctions as you can. In particular,
1)	Is the energy spectrum continuous or discrete? What happens at E<0?
	Using symmetry arguments, sketch wavefunctions for the three lowest-energy states
3)	Estimate an expectation value of the position operator X in an arbitrary state
	described by $\psi_n(x)$.