Wave Functions and Probability Pretest

University of Colorado

Please type your name in the form: Last, First:

Required.

NOTE!! Please type in your CU userid (that's the username you use to log in to CULearn. We do NOT want your password. It probably looks like your last name, perhaps with a few extra characters. Note that it is definitely NOT your numerical (9 digit) student ID!!
This script cannot "error check", you have to be sure you type it in correctly! Thanks

Please type your CU userid:

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For questions 1 and 2 below, you are given a particular (physically reasonable) quantum mechanical wave function, $\Psi(x,t)$, of the very specific form, $\Psi(x,t) = f(x)\, e^{i\, c\, t}$ where f(x) is a real function of x and c is a real constant.

Q1:
a) Is the "expectation value of x", <x>, real?

Required.

Select one...

b) Explain your answer:

Required.

Q2: a) What, if anything, can we say about the sign of <x> at time t=0?

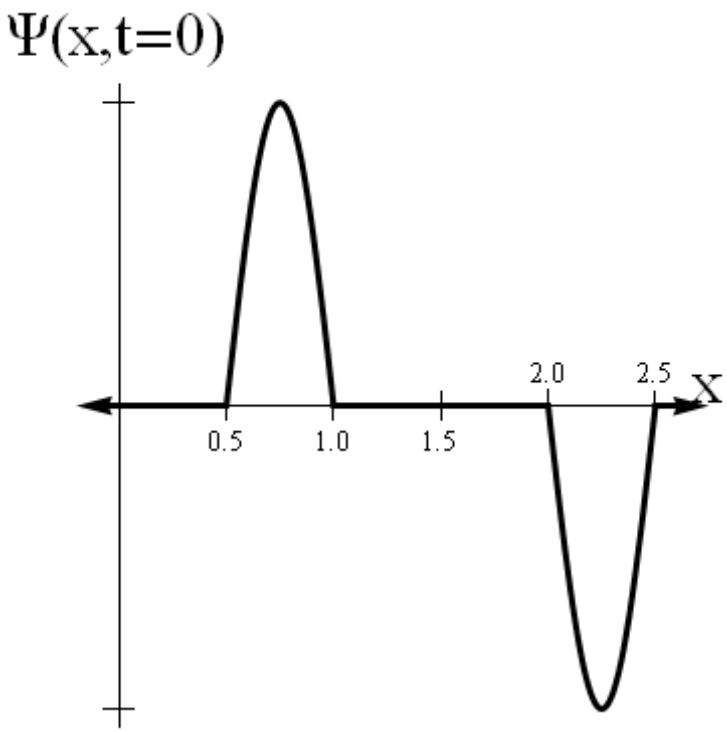
Required.

Select one...

b) Explain your answer:

Required.

The next two questions, refer to the normalized wave function, Ψ(x,t=0) which is shown at the right.



Q3: a) What, if anything, can we say about <x>?

Required.

Select one...

Time remaining:

b) Explain your answer: **0:14:38**

Required.

Q4: a) What, if anything can we say about the standard deviation of x, σ_x?

Required.

Select one...

b) Explain your answer:

Required.

Submit responses

Questions or Comments?
Contact the 123 tutorial pretest coordinator at uwttl123@u.washington.edu