# Quantum Mechanics
# Physics 237

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1

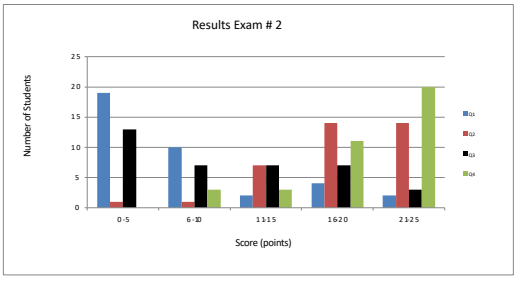
## Announcements

- Homework # 8 is due on Friday April 1.
- Exam # 2 is/will be returned this week during recitations.
- Reminder:
  - Requests to regrade certain parts of Exam # 2 will need to be submitted via email to Prof. Wolfs in writing (with a copy of the graded exam) by Thursday April 7.



2

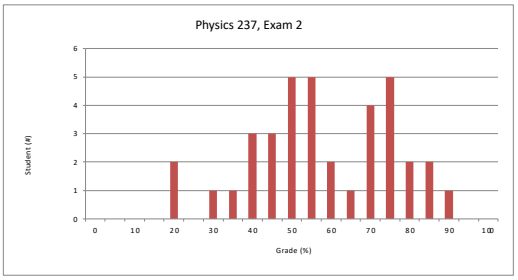
## Results Exam # 2.






3

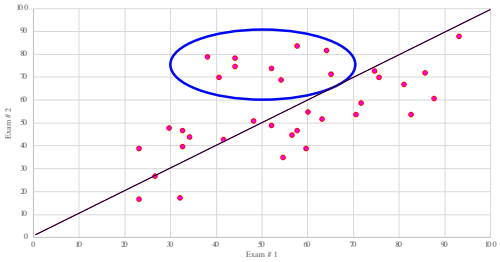
## Results Exam # 2.






4

## Some dramatic improvements on Exam # 2.

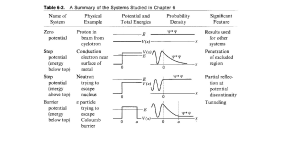




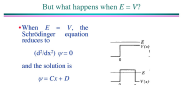

5

## Sometimes I give useful hints …..

Exam # 2: knowing the wavefunction in different regions ($V > E$ and $V < E$) is important.



Frank L. H. Wolfs Department of Physics and Astronomy, University of Rochester, Lecture 16, Page 3

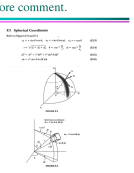



Exam # 2: one more comment.

- Transitions between states are possible when the expectation value of the dipole moment is none zero:

$$\langle \vec{p}_{fi} \rangle = e\langle \vec{r} \rangle_{fi} \neq 0$$

- This requires you to evaluate the expectation value of the vector $r$, **not the expectation value of the radial distance $r$.**

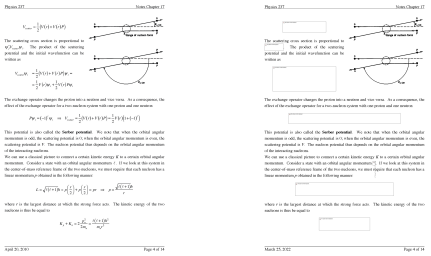


Frank L. H. Wolfs Department of Physics and Astronomy, University of Rochester, Lecture 16, Page 5



6

## Digital Obsolescence.
## It can happen quickly!!!

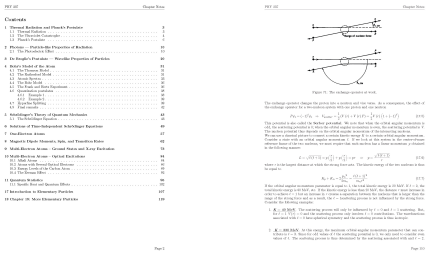






7

## I started the conversion to latex. A slow process but it will allow me fix mistakes!

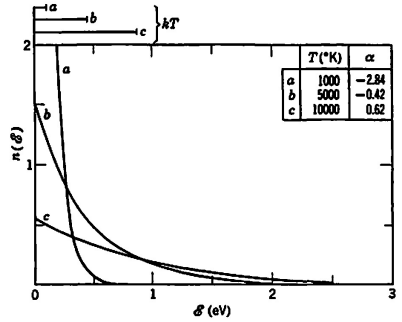






8

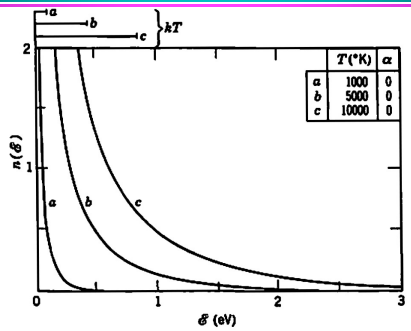
## The Boltzmann distribution.
## Particle distributions at constant density.






9

## The Bose distribution.






10

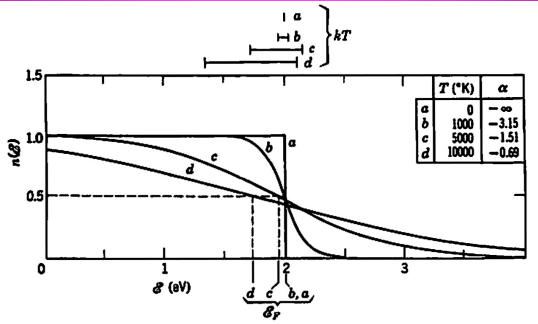
## 2 Minute 56 Second Intermission.

- Since paying attention for 1 hour and 15 minutes is hard when the topic is physics, let's take a 2 minute 56 second intermission.
- You can:
  - Stretch out.
  - Talk to your neighbors.
  - Ask me a quick question.
  - Enjoy the fantastic music.




11

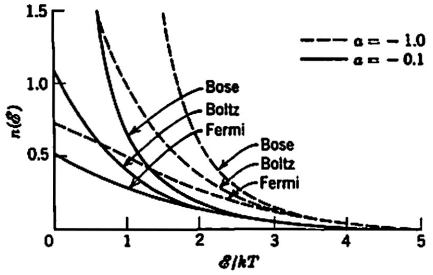
## The Fermi Distribution.






12

## Comparing the distributions.






13

## ENOUGH FOR TODAY?



14