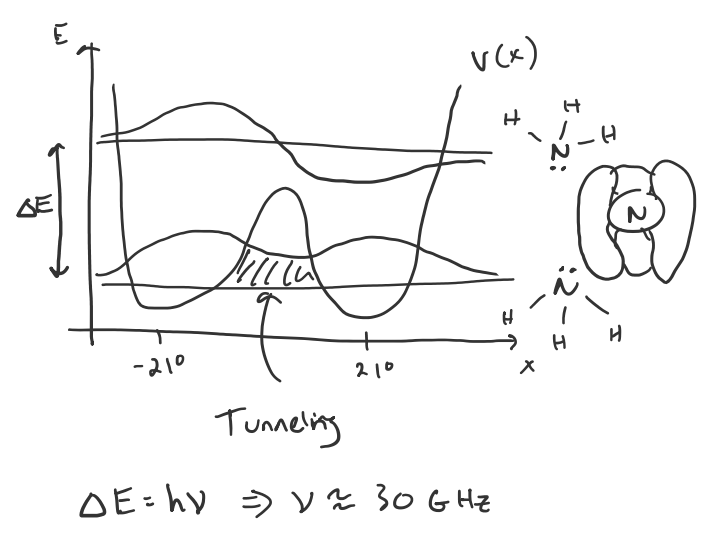
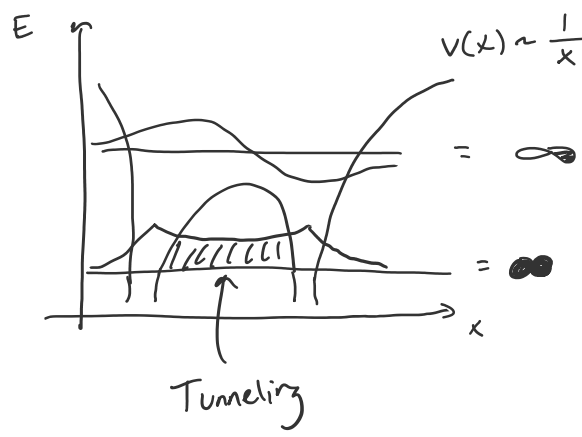
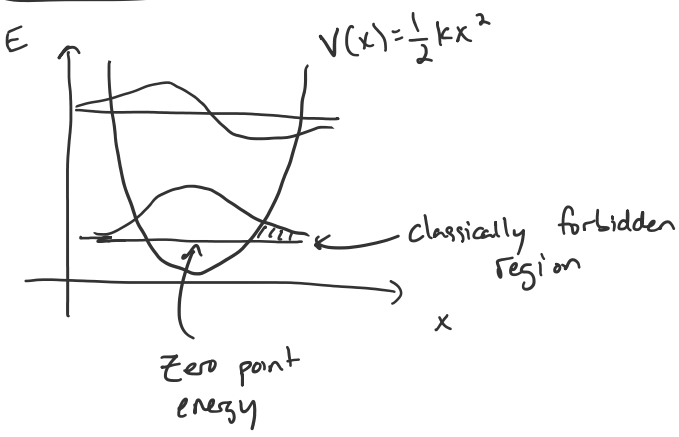


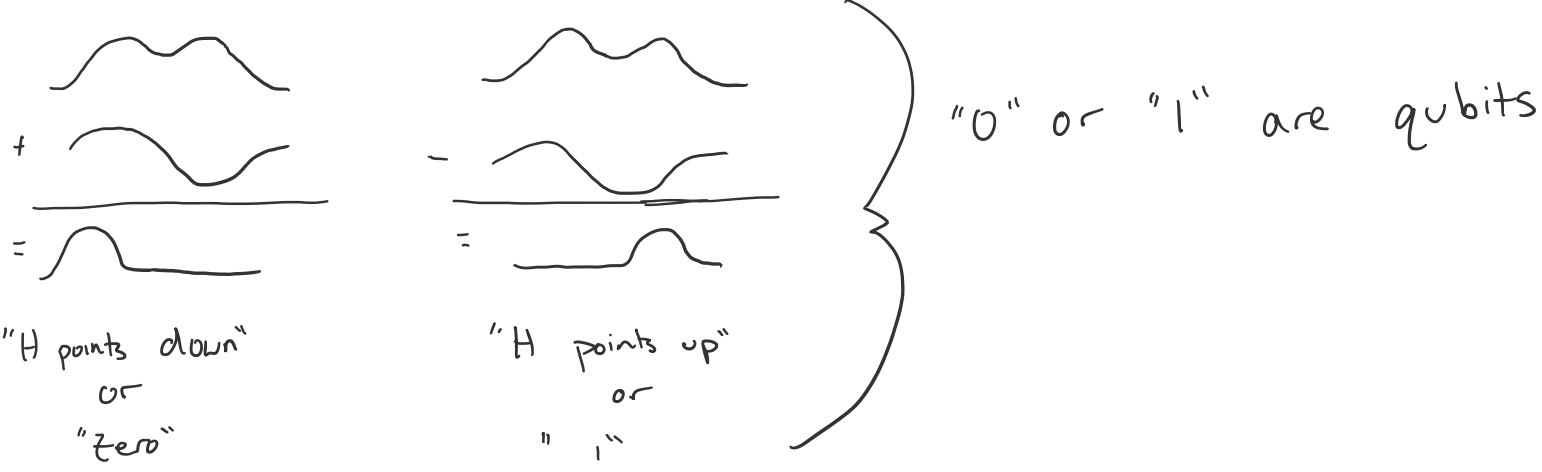
Lecture 16

Wednesday, September 27, 2023 10:01 AM

End of QM



Quantum Superposition:



Conjugate Variables:

$$P = \frac{\hbar}{i} \frac{\partial}{\partial x} \Rightarrow \Delta x \Delta p = \frac{\hbar}{2} \Rightarrow \text{more wiggles, higher kinetic energy}$$

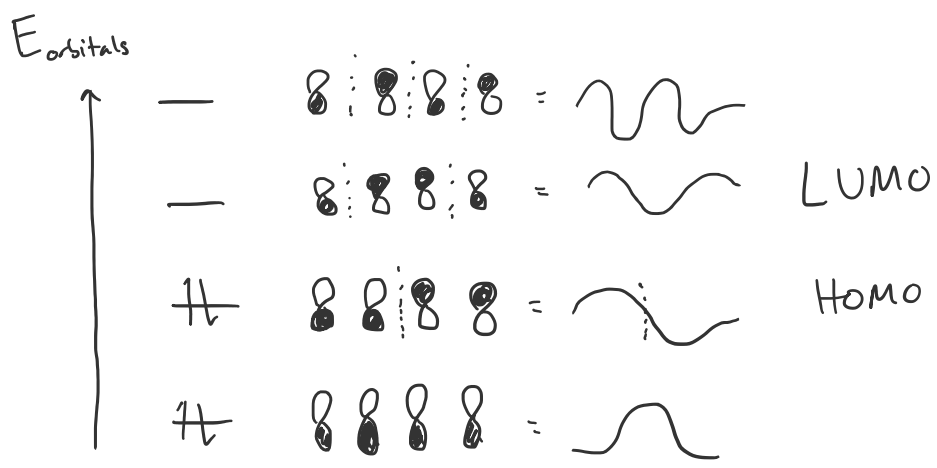
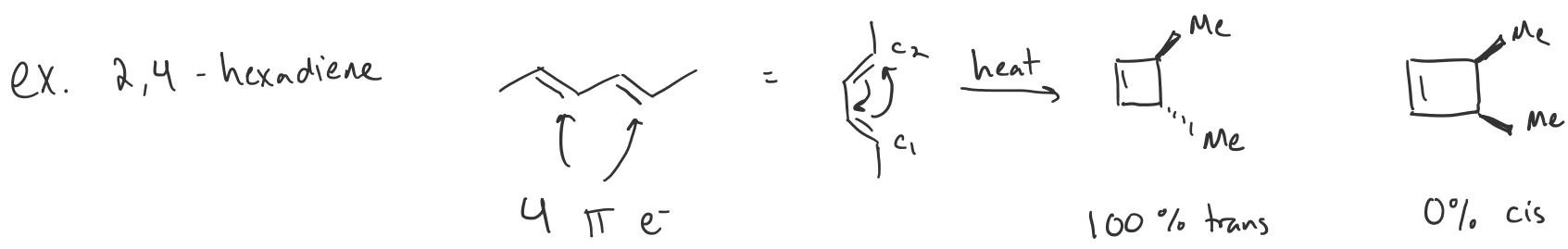
$$\Psi(x_1, x_2) = -\Psi(x_2, x_1) \text{ for fermions} \Rightarrow \text{PEP}$$

$$P = |\Psi|^2 \quad \bar{A} = \int dx \Psi^*(x) A \Psi(x)$$

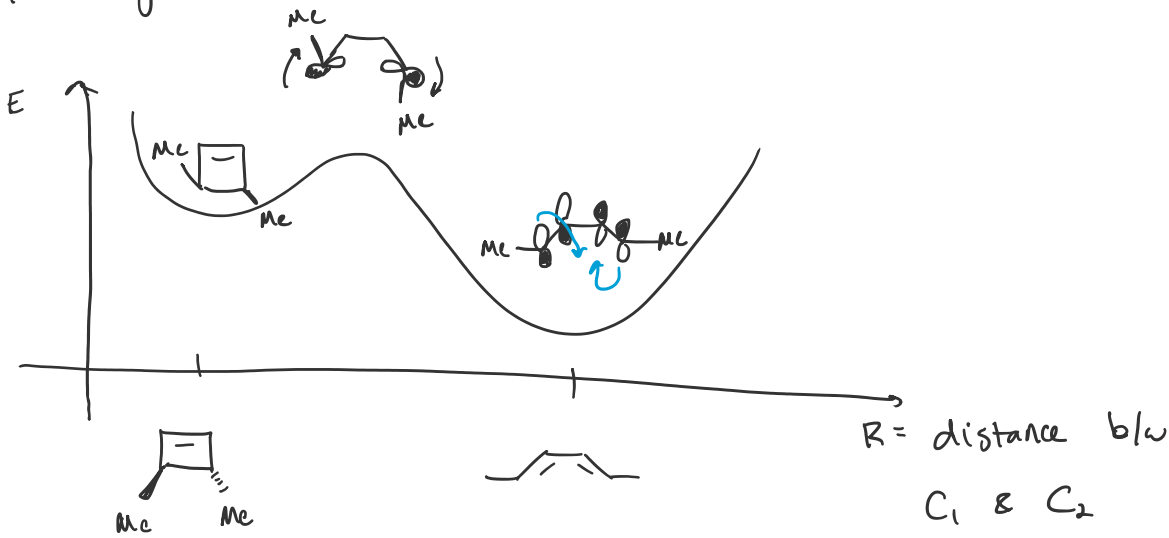
$$\Psi_A(x_1) + \Psi_B(x_1) \text{ quantum superposition state}$$

$$\Psi_1(x_1) \cdot \Psi_2(x_2) \text{ multi-particle product state}$$

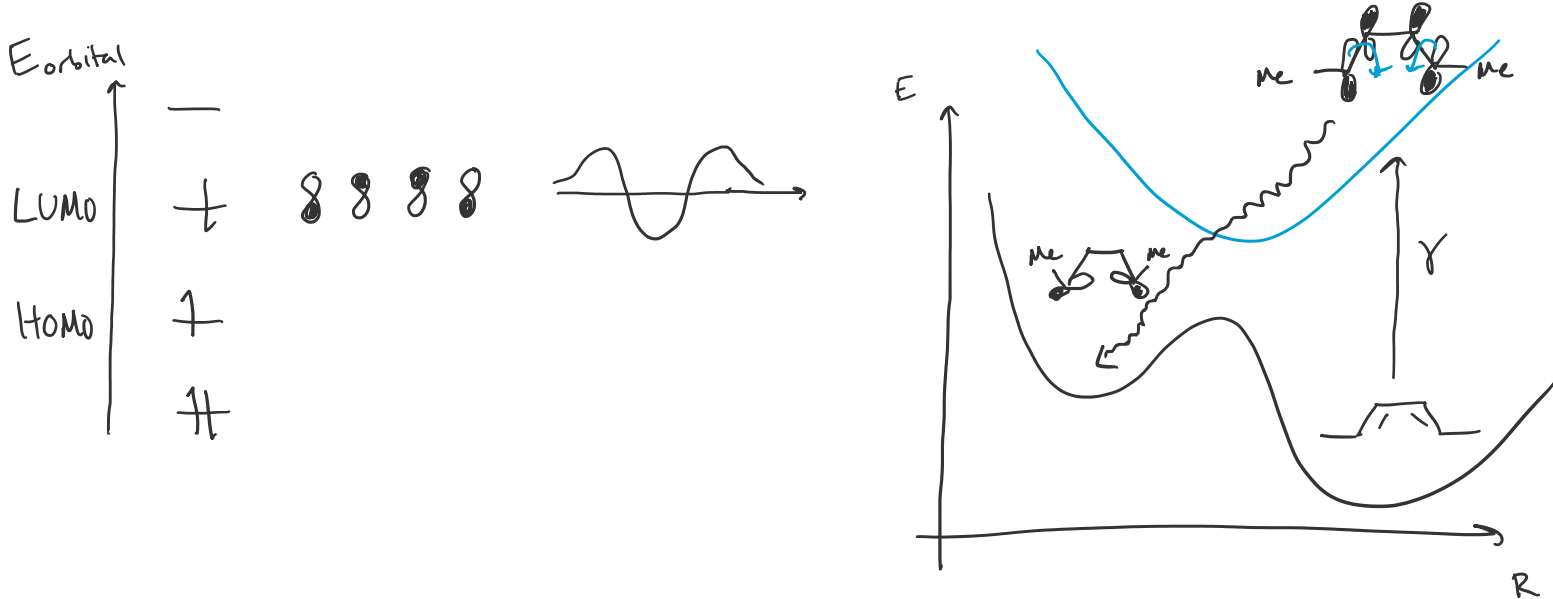
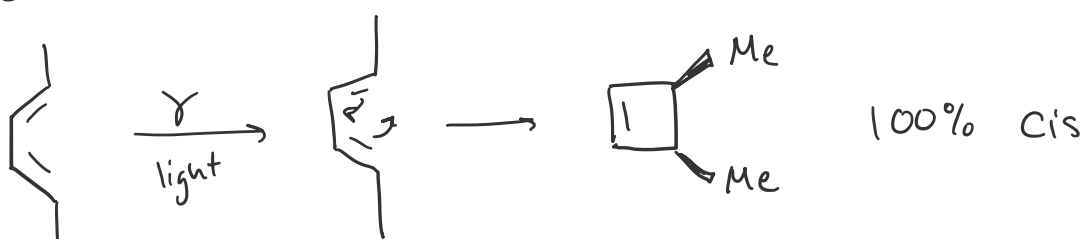
Today: How chemical rxn go over barriers



The highest energy orbital is the one that makes the new bond (HOMO)



But =



'Woodward Hoffmann' rules