

Ch 5 HW: Sec Asses 19 Rev Cou 58,59,61,70,77
 Sec 5.3

obj: Distinguish between quantum mechanics and classical physics.

Classical Physics (Mechanics)

- Describes the behavior of the macroscopic world.
 - * The world we live in!!
- Governed by Newton's Laws of Motion.
- In terms of Energy, Objects gain or lose energy in a continuous manner.

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- Quantum Physics

- Describes the behavior of the microscopic world.
- Energy is changed in quanta.
- Planck \Rightarrow Determined how to calculate the quantum.

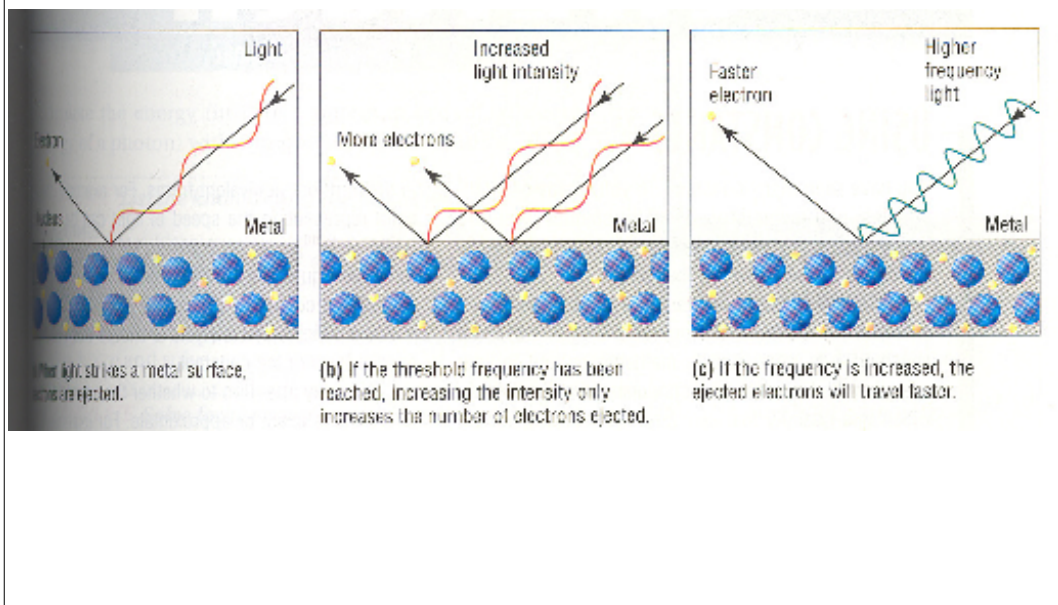
$$E = h\nu$$

↑
quantum of Energy

$h =$ Planck's Constant
 $6.626 \times 10^{-34} \text{ J}\cdot\text{s}$

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- Photoelectric Effect.
- Photon - quantum of Light energy that acts like a particle.



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- Particle - Wave Duality.
- de Broglie Equation
- Waves act like particles and particles act like waves.

$$\lambda = \frac{h}{mv}$$

- Heisenberg Uncertainty Principle.
- Cannot know both the position + velocity of an electron at the same time.

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