$c = f\lambda$, $E = hf$

$E = \frac{hc}{\lambda}$

$\lambda = \frac{hc}{E}$

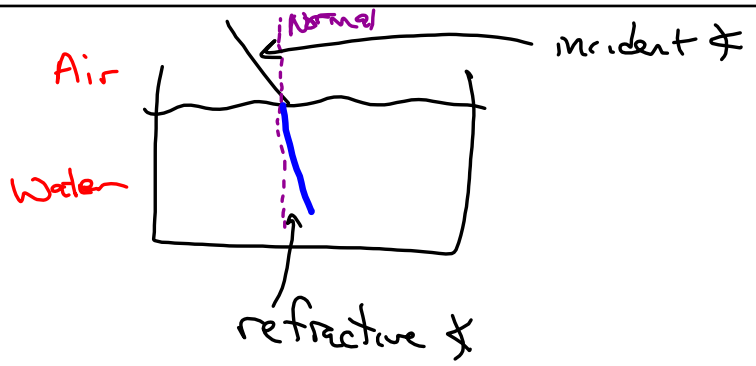
Oct 21-7:35 AM

48 g/mole | 1 kg/1000 g | 1 mole O_3 / 6×10^{23} molecules O_3 = 8×10^{-26} kg/molecule

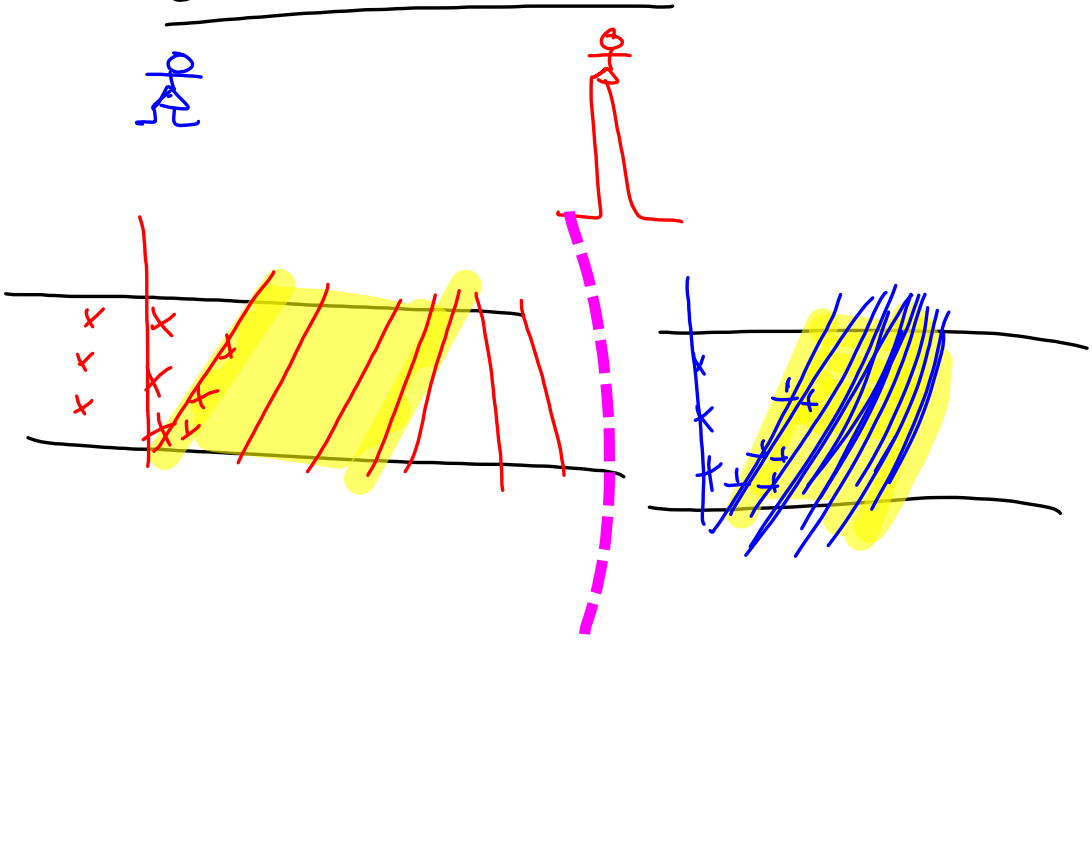
$\lambda = \frac{h}{mv}$

$= \frac{6.63 \times 10^{-34}\ J \cdot sec}{(\quad)(550\ m/sec)}$

Oct 21-8:23 AM



Oct 21-8:34 AM



Oct 21-8:39 AM

2 energy level to 5 energy level

$\Delta E = R_H \left(\frac{1}{n_i^2} - \frac{1}{n_f^2} \right)$

$\Delta E = R_H \left(\frac{1}{2^2} - \frac{1}{5^2} \right)$

$\Delta E = 4.58 \times 10^{-19}$ J

2.18×10^{-18} J

$\lambda = \frac{hc}{E}$

$= \frac{(6.63 \times 10^{-34})(3 \times 10^8)}{4.58 \times 10^{-19}}$

4.34×10^{-7} m | 10^9 nm / 1 m

434 nm

Blue

Oct 21-8:53 AM

Quantum #'s

1) Principal Energy level (n)
   - Period ⟺ on P.T.

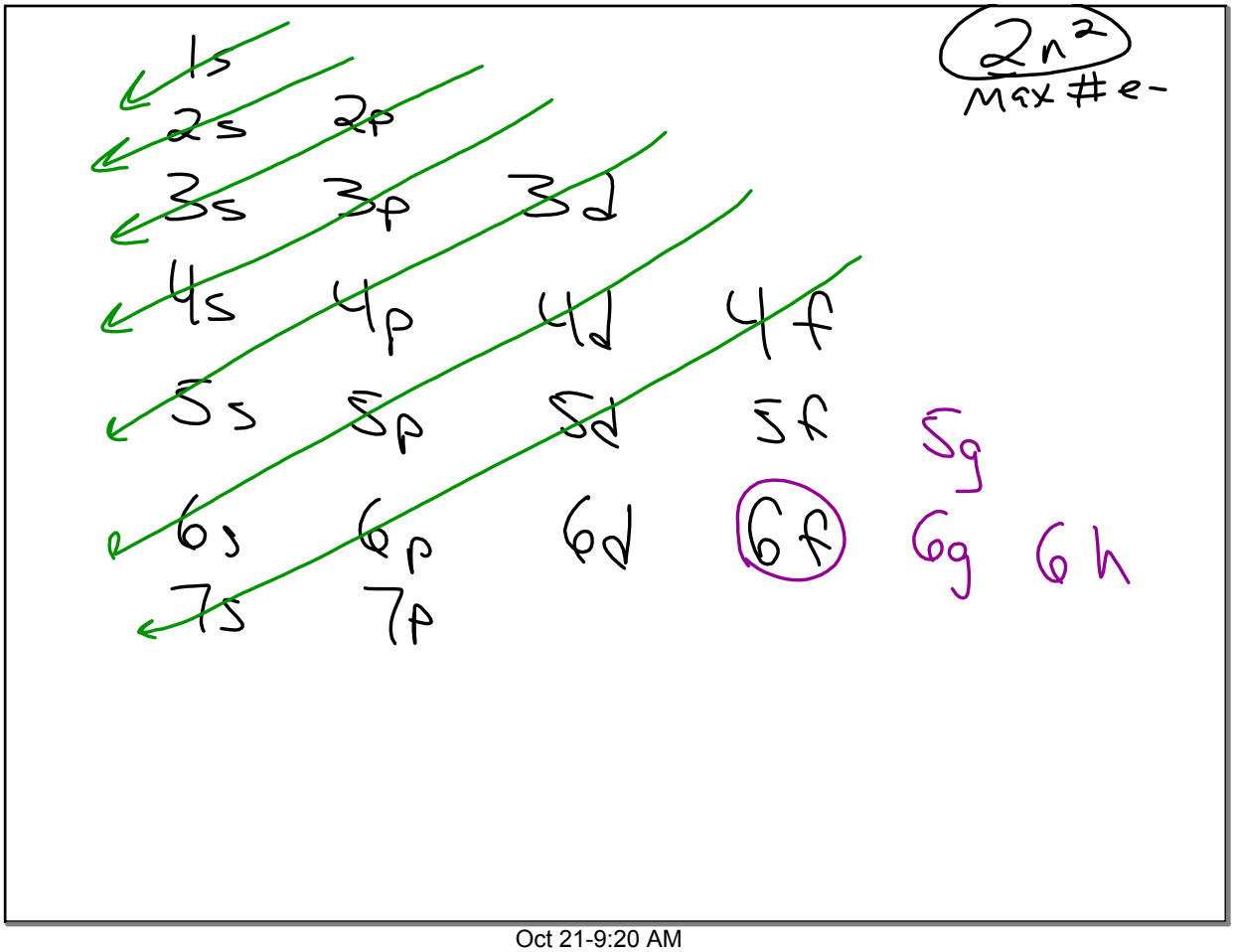
2) sublevels (l)
   - s, p, d, f
   - 1, 3, 5, 7

3) orbitals (m)
   - apartment

4) holds
   - 2e⁻
   - ↑ ½ or ↓ -½
   - Spin (S)

n, l, m, s
4 Quantum #'s

Oct 21-9:14 AM



Oct 21-9:20 AM

Ca 20e-

$1s^2\ 2s^2\ 2p^6\ 3s^2 3p^6\ 4s^2$ ← 20

[Ar] valence

[Ar] $4s^2$

6/68 a → d

Oct 21-9:28 AM