

$\rightarrow C = f \lambda$ indirect
 $E = h f$ direct
 $E = R_H \left(\frac{1}{n_i^2} - \frac{1}{n_f^2} \right)$

$E = \frac{h c}{\lambda}$

$\lambda = \frac{h}{m v}$

$m = \text{Kg}$
 $E = \text{J}$
 $v = \text{m/sec}$
 $c = 3 \times 10^8 \text{ m/sec}$
 $h = 6.63 \times 10^{-34} \text{ J}\cdot\text{sec}$
 $R_H = 2.18 \times 10^{-18} \text{ J}$

Nov 4-7:38 AM

$C = f \lambda$
 $\frac{3 \times 10^8 \text{ m}}{\text{Sec}} = f \text{ (G)}$
 $0.5 \times 10^8 = f$
 $5 \times 10^7 = f$

$5 \times 10^7 \text{ Hz}$
 $\text{MEGA} = 10^6$
 $5 \times 10^1 \text{ MHz}$
 50 MHz

Nov 4-8:05 AM

⑥
$$\underline{E} = R_H \left(\frac{1}{n_i^2} - \frac{1}{n_f^2} \right) = \underline{h f} = E$$

$E = h f$
 $f = \frac{E}{h}$

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

$$= \frac{2.18 \times 10^{-18}}{6.63 \times 10^{-34}} \left(\frac{1}{2^2} - \frac{1}{4^2} \right)$$

Nov 4-8:08 AM

Principal Quantum # n = PEL SIZE $3, 2, 1$

Azimuthal quantum # l = Sublevel s, p, d, f SHAPE $0, 1, 2, 3$ MAX $(n-1)$

Magnetic Quantum # M (M_l) = Orbital RANGE $-l$ to $+l$ ORIENTATION IN SPACE P_x, P_y, P_z

Spin S (m_s) $+\frac{1}{2}$ $-\frac{1}{2}$ \uparrow \downarrow

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⑧ $\lambda = \frac{h}{mv}$ $\frac{v}{c} = \frac{h}{m(\lambda)}$

$$= \frac{6.63 \times 10^{-34} \text{ J}\cdot\text{sec}}{(9.1 \times 10^{-31} \text{ kg})(8.7 \times 10^{-11} \text{ m})}$$

Nov 4-8:20 AM

$1s$
 $1, 0, 0, +\frac{1}{2}$

$1s$
 $1, 0, 0, -\frac{1}{2}$

$2p$
 $2, 1, 0, -\frac{1}{2}$

$2p$
 $2, 1, 0, +\frac{1}{2}$

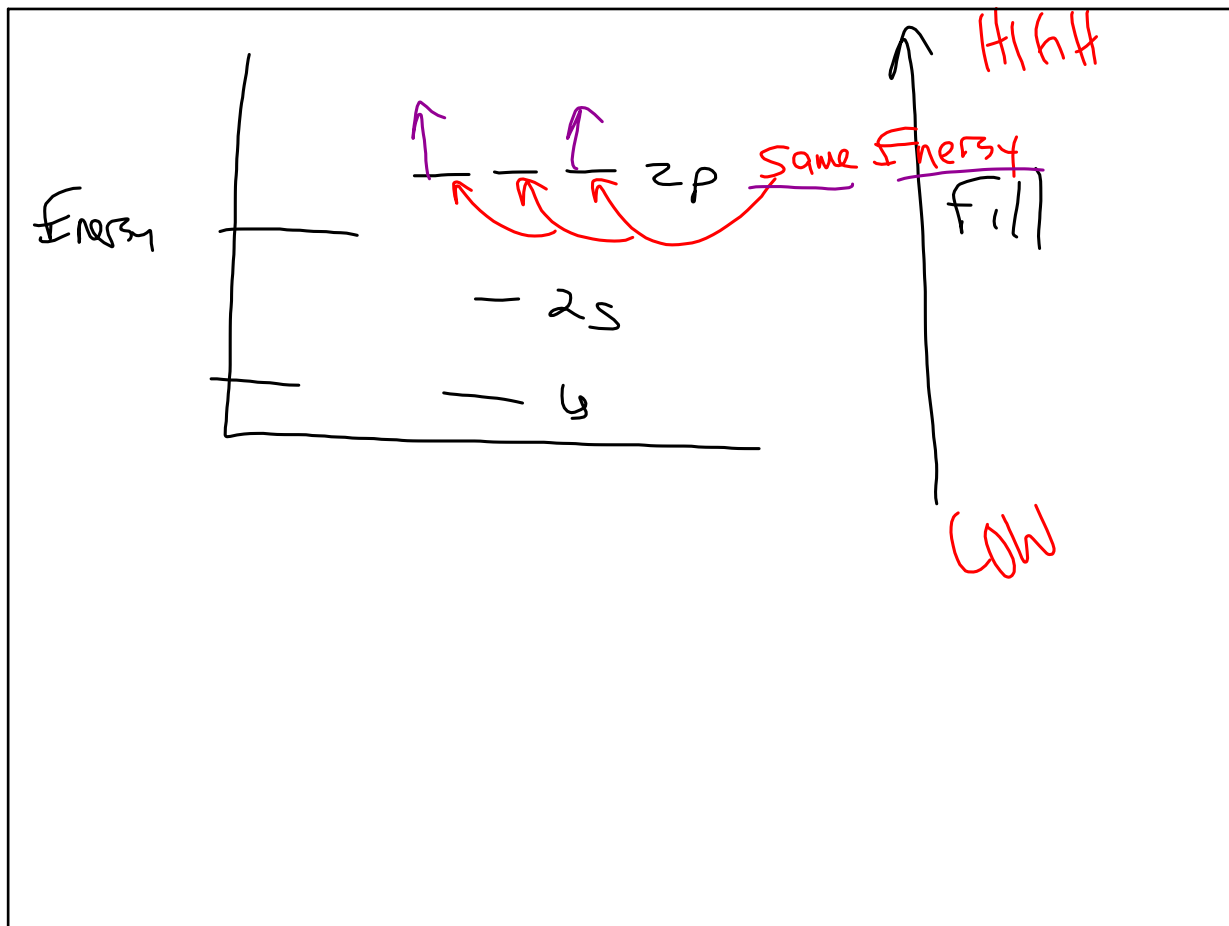
$2p$
 $2, 1, 1, +\frac{1}{2}$

$2p$
 $2, 1, 1, -\frac{1}{2}$

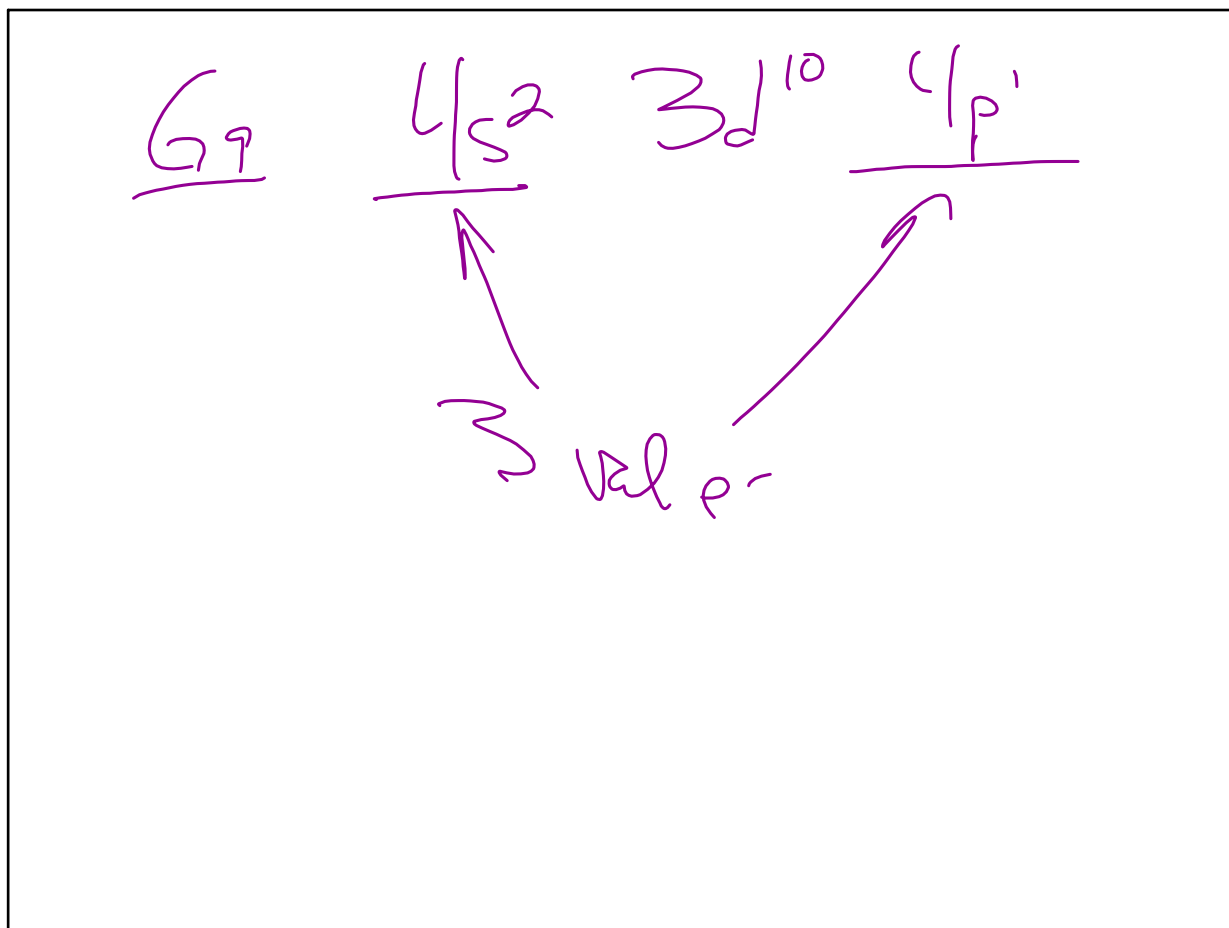
Given: $2p$
 $2, 1, 0, +\frac{1}{2}$

PEC Sub orb Spin
 $2, 1, -1, +\frac{1}{2}$
 $(2) (p)$

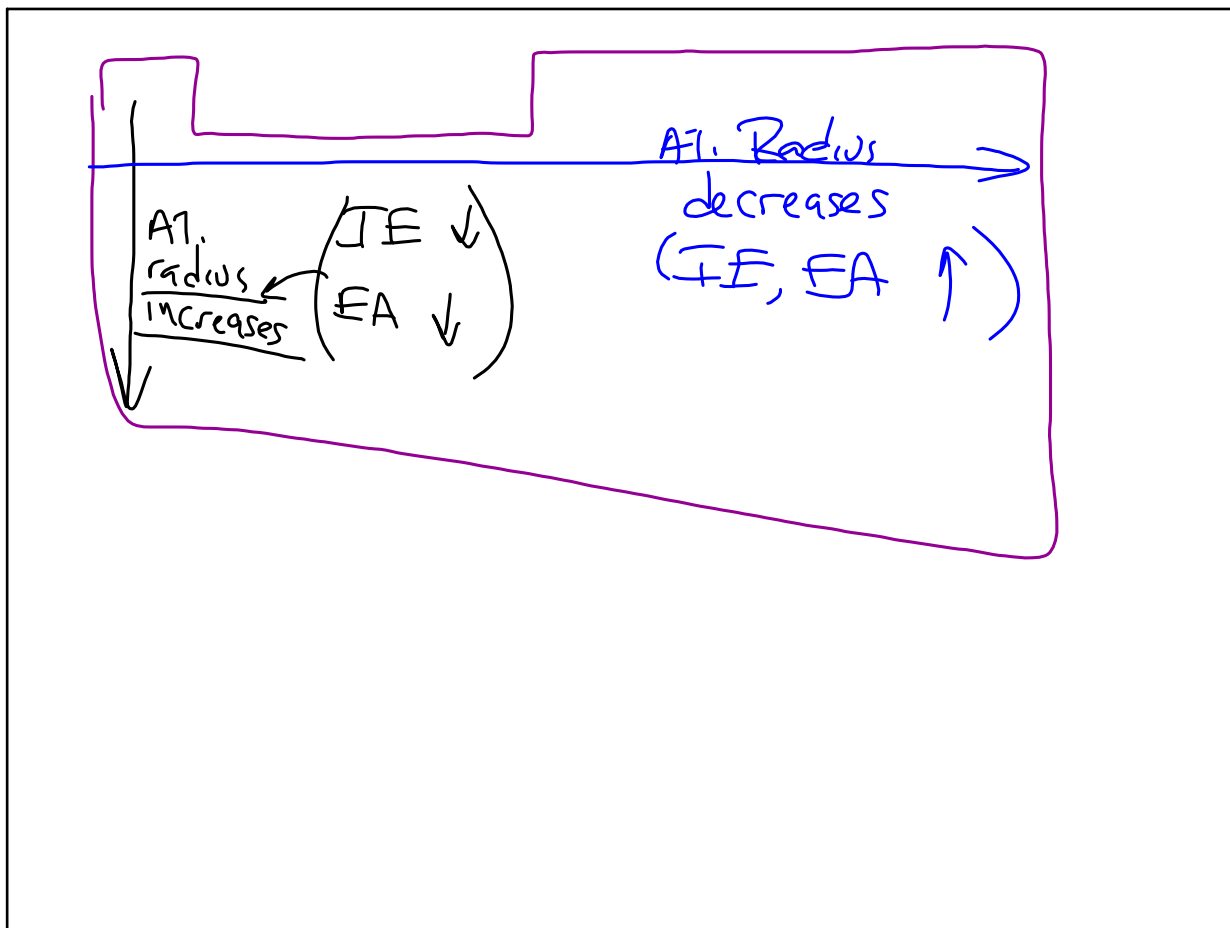
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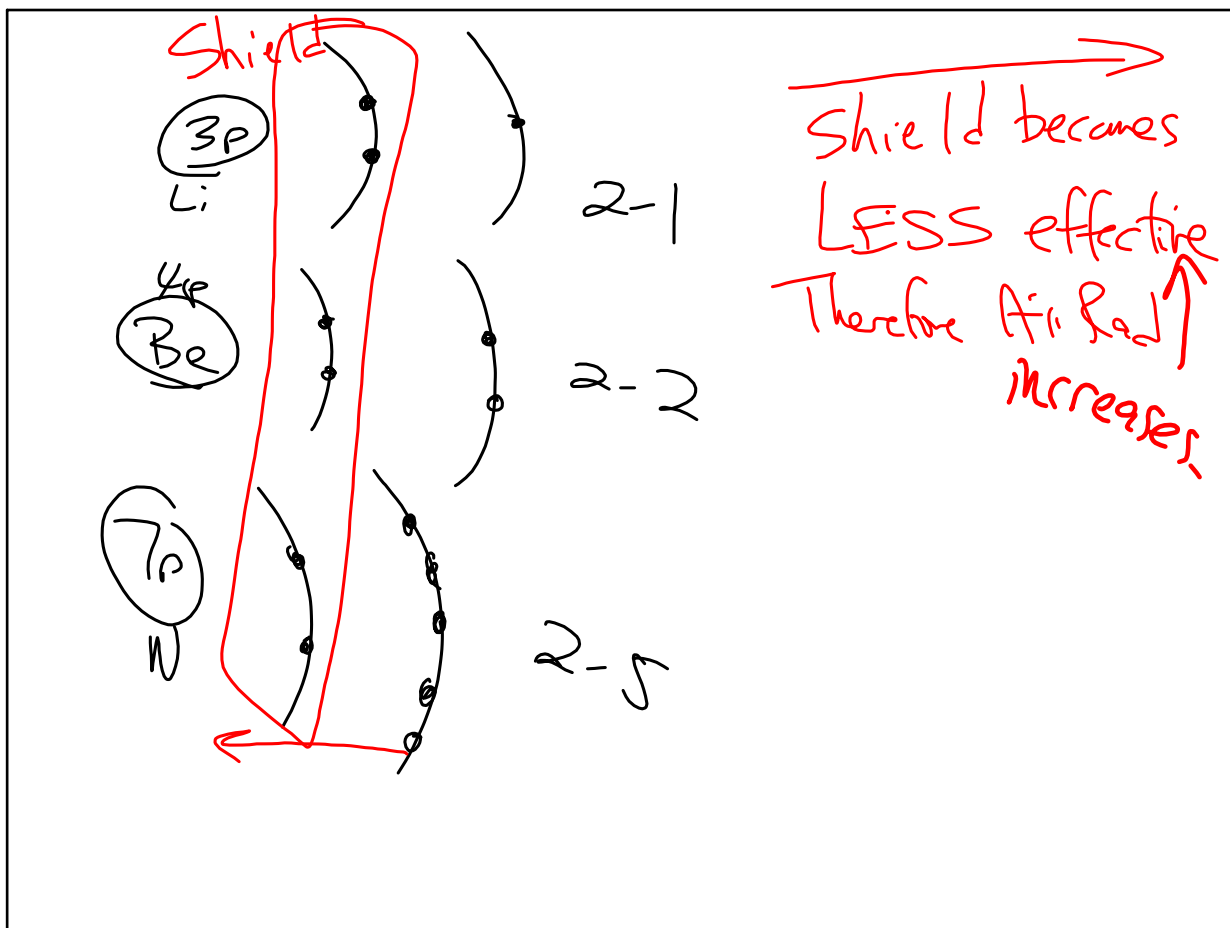
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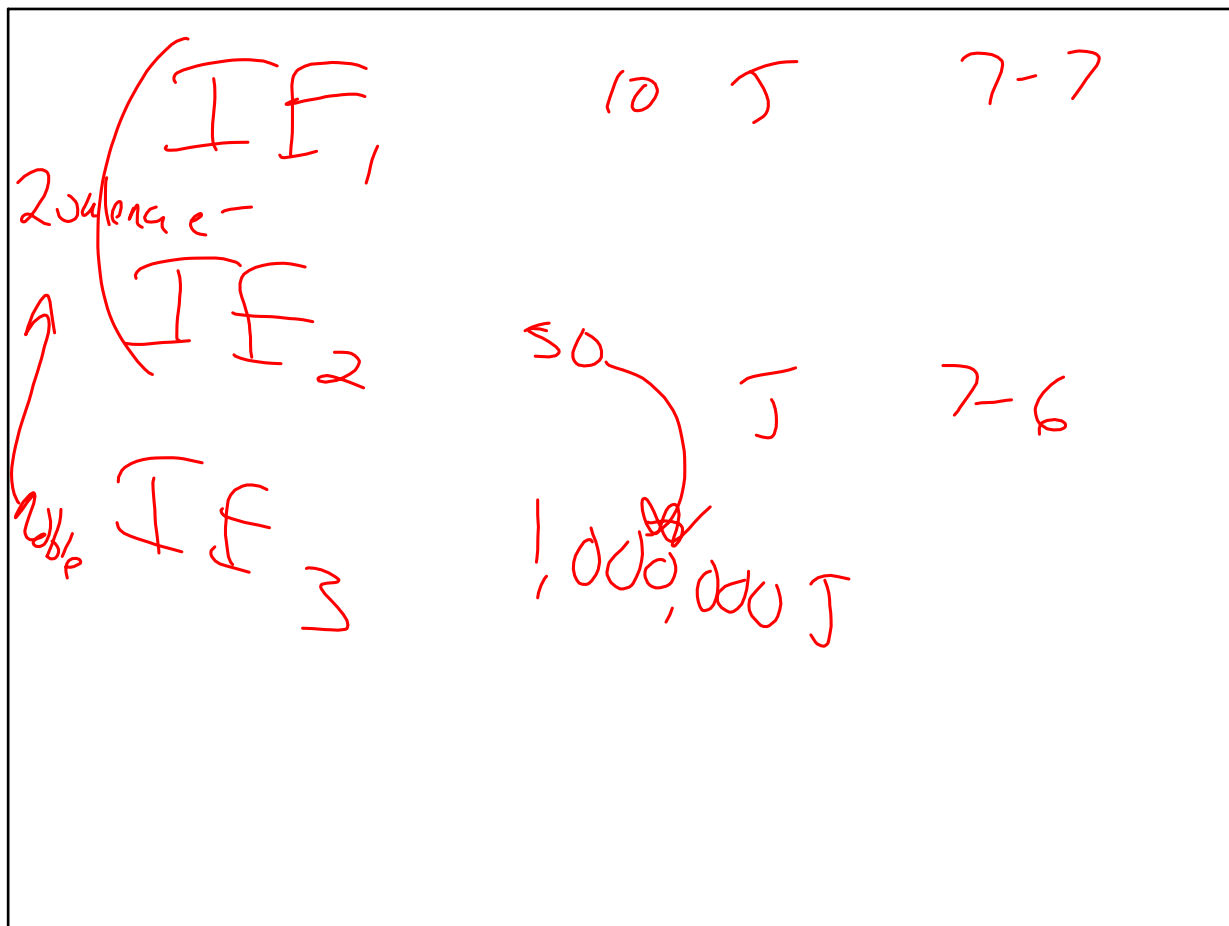
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Nov 4-9:08 AM



Nov 4-9:11 AM



Nov 4-9:14 AM

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7/26, 36, 4/6

Nov 4-9:16 AM