

(635)  $n=6 \rightarrow n=2$   $E=?$ , color of light.

$$E = R_H \left( \frac{1}{n_1^2} - \frac{1}{n_2^2} \right)$$

$$E = 2.18 \times 10^{-18} \left( \frac{1}{6^2} - \frac{1}{2^2} \right)$$

$E = 4.84 \times 10^{-19} \text{ J}$  emitted

Rydberg constant

$E = hf$   $f = \frac{c}{\lambda}$

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

$$\frac{\lambda}{1} = \frac{hc}{E} = \frac{(6.63 \times 10^{-34})(3 \times 10^8)}{4.84 \times 10^{-19}} = 4.11 \times 10^{-7} \text{ m}$$

$\lambda = 10^{-9} \text{ m}$

$10^2 \times$   $411 \times 10^{-9} \text{ m}$

Blue  $411 \text{ nm}$

$2.0 \times 10^3$   $10 \times$  bigger

$2.0 \times 10^4$   $10 \times$  smaller

Heisenberg  $\rightarrow$  Where? And how fast?

$\hookrightarrow$  N45P

I 684 speed control

$e^-$  Impossible to know simultaneously exact speed + location.  $(e^-)$

Regents Review  
electron configuration

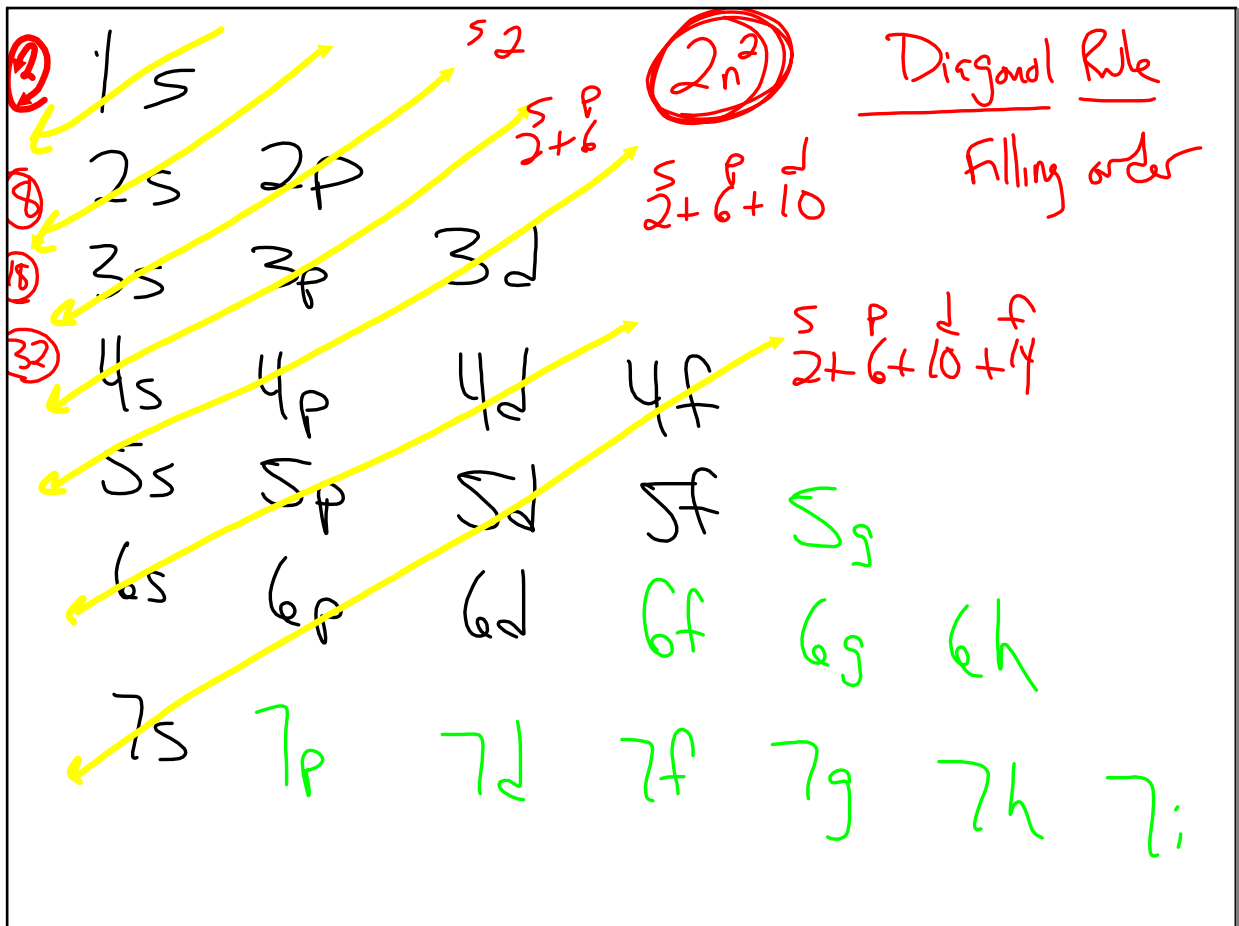
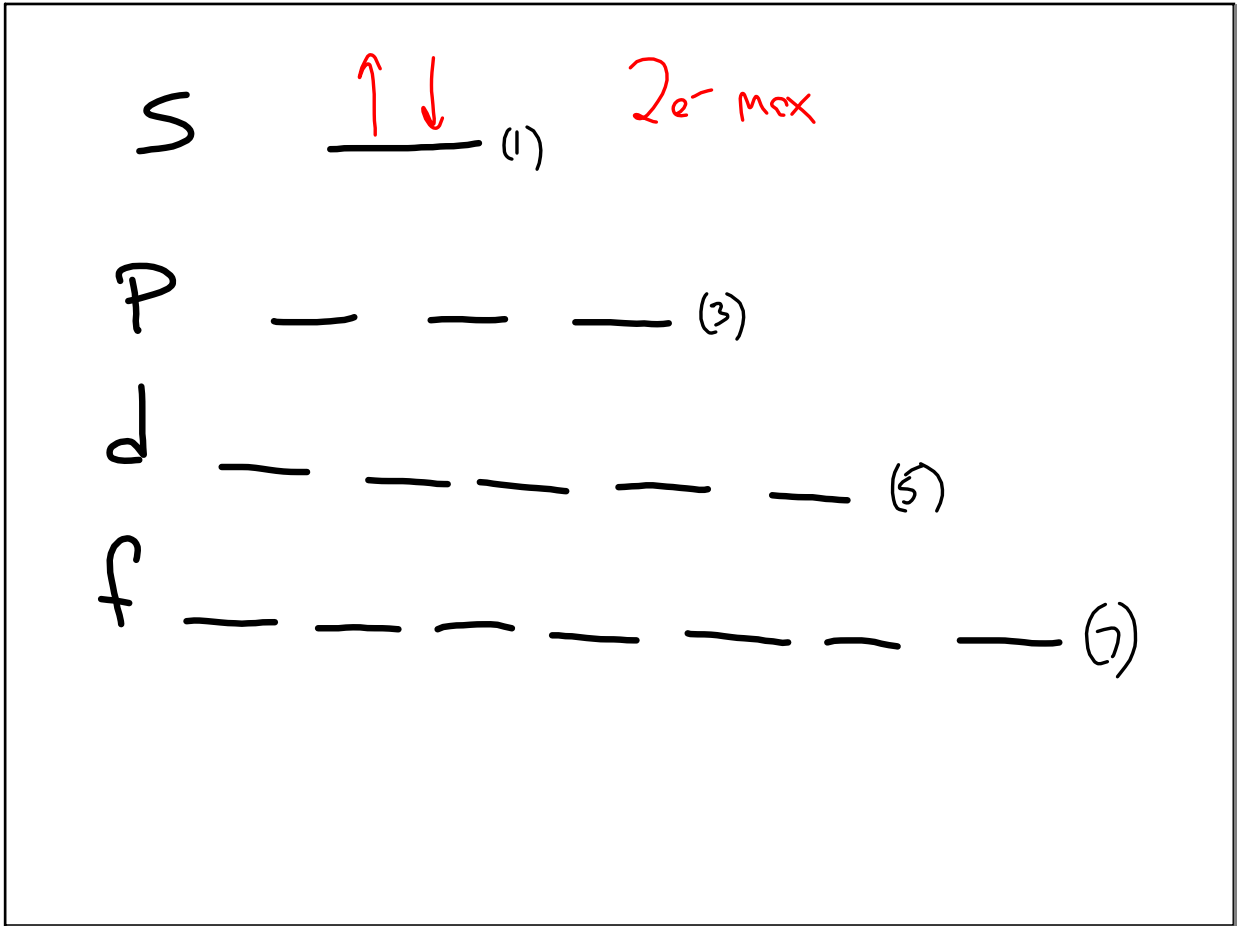
Block Sublevels

S	→ Groups 1+2	<u>Max. e-</u> 2e <sup>-</sup>	s <sup>2</sup>	} 19e <sup>-</sup> to have
P	13→18	6e <sup>-</sup>	p <sup>6</sup>	
d	3→12	10e <sup>-</sup>	d <sup>10</sup>	
f	Lanthanide + Actinide series		f <sup>14</sup>	

K 2-8-8-1

Energy level (Period #)

- ↳ sublevels (s, p, d, f)
- ↳ orbitals ("beds" in each sublevel)
- ↳ Spin (direction you sleep)
  - (max 2e<sup>-</sup> per orbital)
  - ↑ ↓



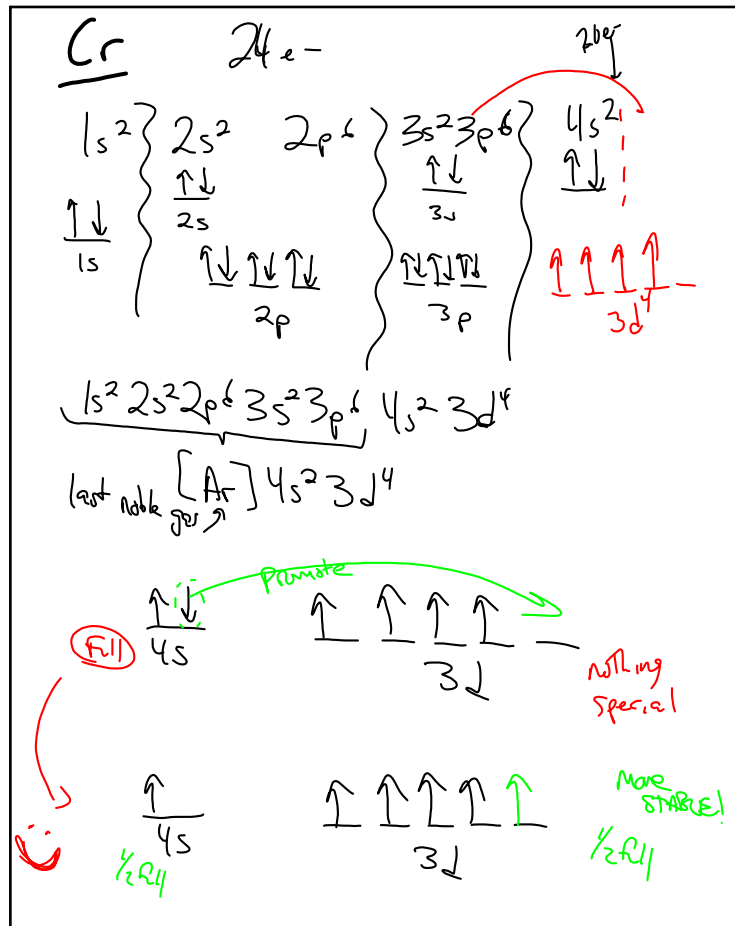
S+P main group ON TIME

d → arrive 1 period late  
 $3d \rightarrow 4^{\text{th}}$  period  
 $5d \rightarrow 6^{\text{th}}$  period.

f arrive 2 periods late  
 $4f \rightarrow 6^{\text{th}}$  per  
 $5f \rightarrow 7^{\text{th}}$  per

K 2-8-8-1 19e<sup>-</sup>

$1s^2$	$2s^2 2p^6$	$3s^2 3p^6$	$4s^1$
$\frac{19}{-2}$ 17e <sup>-</sup>	$\frac{17}{-8}$ 9	$\frac{9}{-8}$ 1	$\frac{1}{-1}$ <del>0</del>



6/68  $s \rightarrow d$ , 7/1