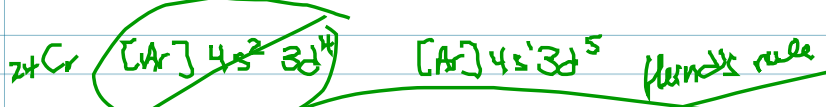
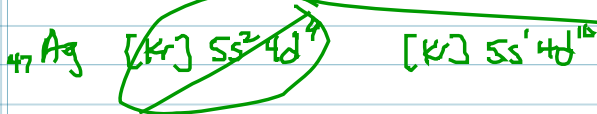


IRREGULARITIES



Minimizes e^-/e^- repulsion



Magnetism

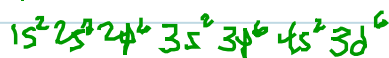
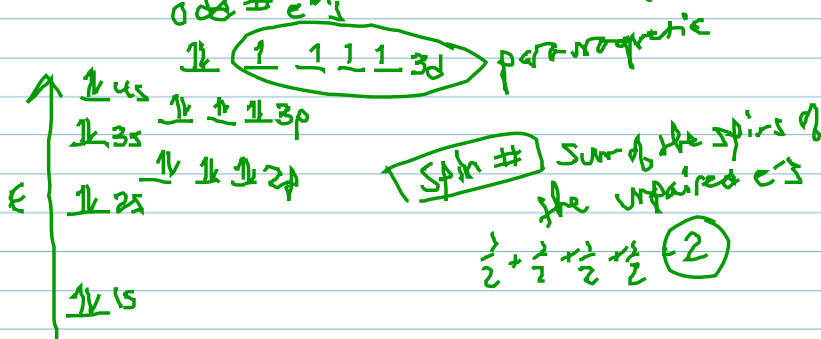
→ every spinning e^- behaves as a tiny magnet

$1 + 1 \Rightarrow$ cancel out each other's magnetic field

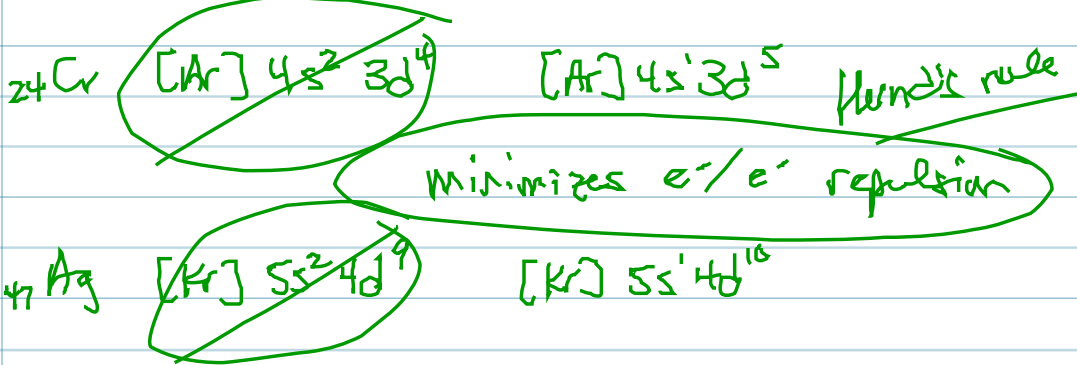
$1 + 1 \Rightarrow$ reinforce the magnetic field

DIAMAGNETIC → No magnetic attraction
 → No unpaired e^- 's
 → Same even #'s

PARAMAGNETIC → attraction to a magnet
 Odd # e^- 's



IRREGULARITIES



Magnetism

→ every spinning e^- behaves as a tiny magnet

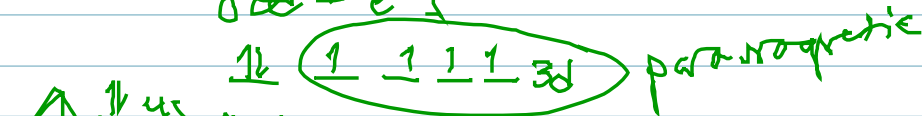
$1 + 1 \Rightarrow$ cancel out each other's magnetic field

$1 + 1 \Rightarrow$ reinforce the magnetic field

DIAMAGNETIC → No magnetic attraction
 → No unpaired e^- 's
 → Same even #'s

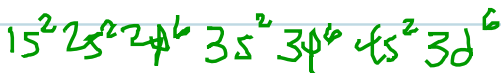
PARAMAGNETIC → attraction to a magnet

odd # e^- 's



Spm # Sum of the spins of the unpaired e^- 's

$$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 2$$



SHIELDING EFFECT

Coulomb's
law

$$F = \frac{k Q_1 Q_2}{r^2}$$

charge
distance

electrons at lower E levels
or lower E orbitals "shield"
the outer electrons from "feeling"
the full nuclear charge

→ reduces the attraction between the
nucleus and the outer e⁻'s
"effective nuclear charge"