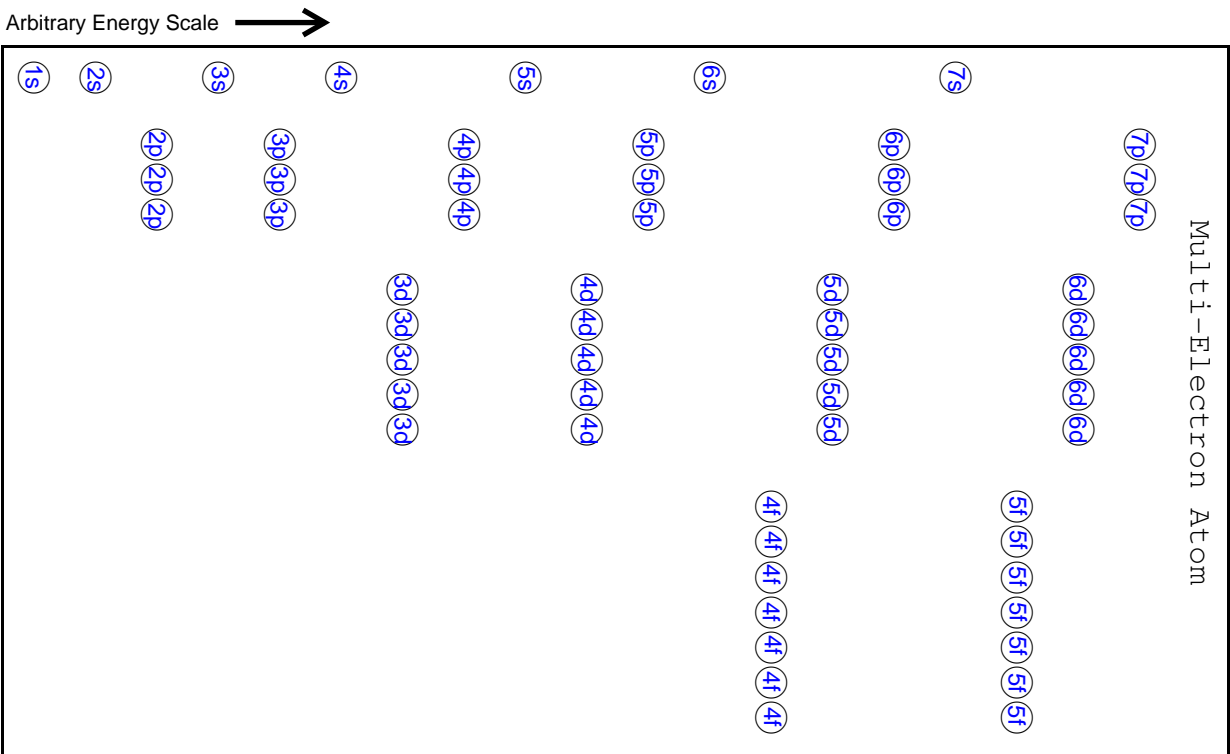
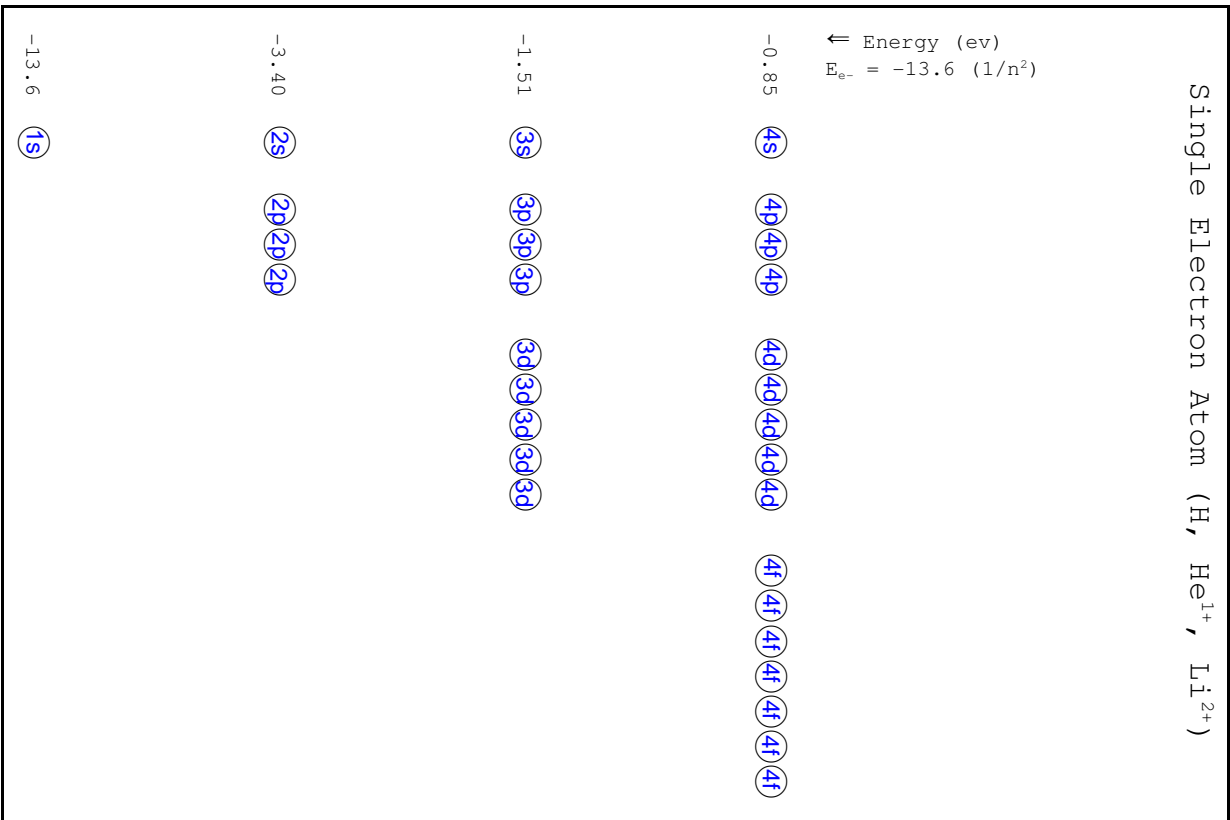
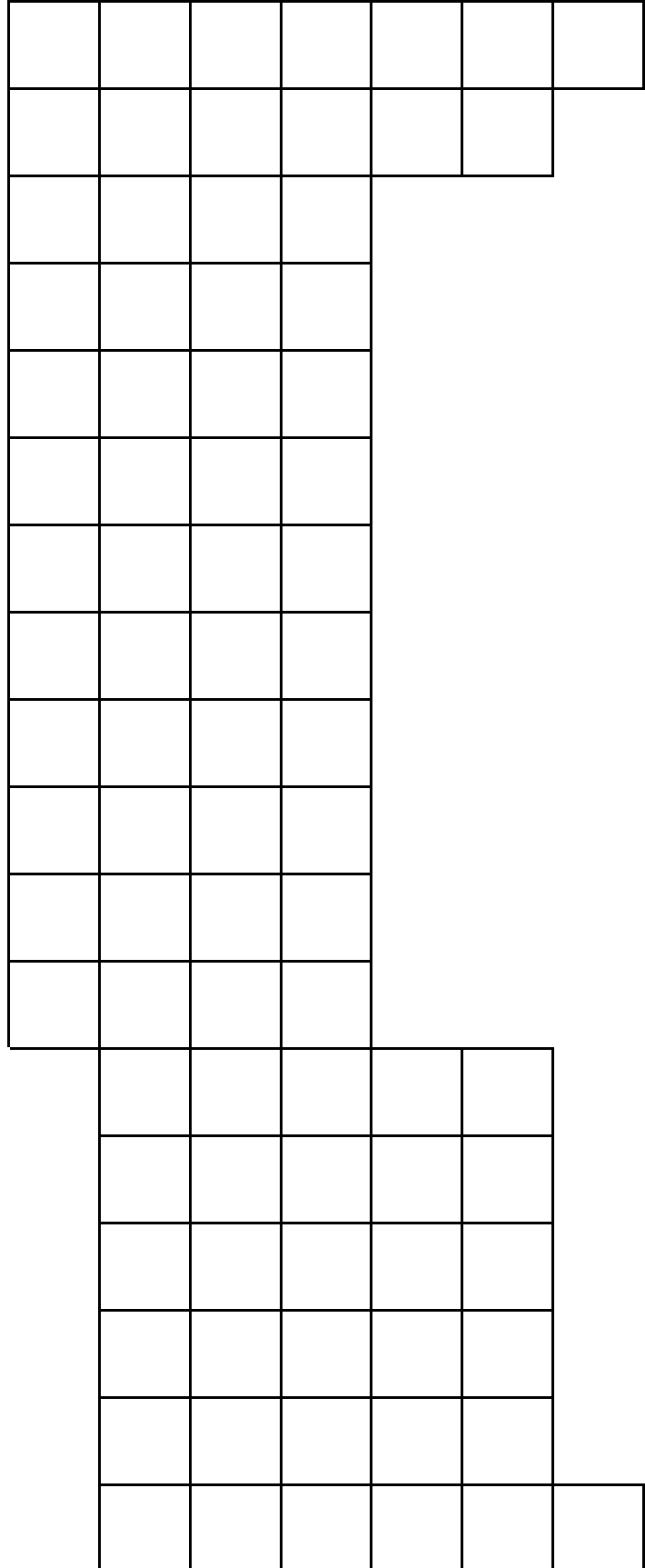
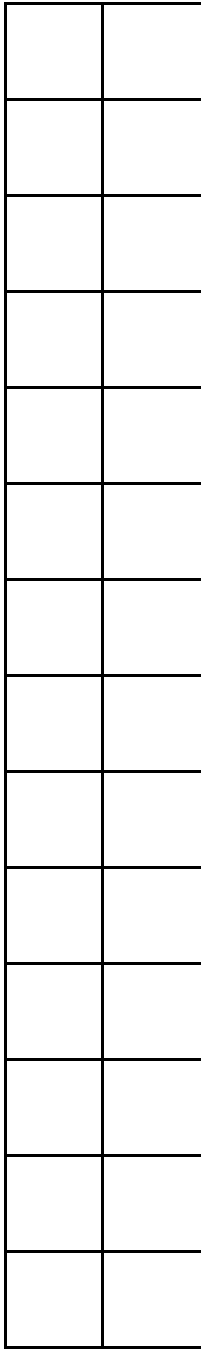


Energy Level Diagrams Showing Energy Shift From Single to Multi-Electron Atom





Two Types of Quantum Questions:

- electron configuration question
- list the quantum number question

Electron configuration means make reference to all electrons in an atom

eg $_{22}\text{Ti}$

$_{98}\text{Cf}^{3+}$

element	n	l	m_l	m_s	end of config.
S					
					$5d^3$
		3	-2	$-\frac{1}{2}$	
Ge					
					$1s^2$
					$5f^{13}$
	4	0	0	$+\frac{1}{2}$	
	4	2	-1	$+\frac{1}{2}$	
					$6d^1$
Yb					

Also should be able to say something intelligent about the following terms:

- Heisenberg uncertainty principle
- photoelectric effect
- quantum hypothesis
- line spectra
- absorption spectra
- emission spectra
- Thomson
- Bohr
- Rutherford
- Pauli Exclusion Principle
- Hund's Rule
- Aufbau Principle