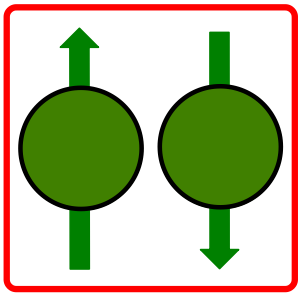
CONCEPT: ELECTRONIC STRUCTURE: ELECTRON SPIN

- An orbital can hold a maximum of ____ electrons that have opposite spins according to the *Pauli Exclusion Principle*.
  - **Pauli Exclusion Principle:** No 2 electrons found within an orbital can have the _____ electron spin.



- **Electron Spin:** Deals with the rotational spin of an electron inside an atomic orbital.
  - Start out filling an orbital with an electron that points _____ followed by the next one pointing _____.
    - An electron that *points up* has an electron spin value of _____ (clockwise).
    - An electron that *points down* has an electron spin value of _____ (counterclockwise).

EXAMPLE: Provide the *n* value, subshell letter, and electron spin for the highlighted electron in a 3rd principal level.

a) n = 4, subshell = d, electron spin = –1/2
b) n = 3, subshell = p, electron spin = +1/2
c) n = 2, subshell = s, electron spin = +1/2
d) n = 3, subshell = p, electron spin = –1/2

PRACTICE: Which of the following can represent the highlighted electron in a set of 5d orbitals.

a) n = 5, subshell = f, electron spin = –1/2

b) n = 4, subshell = s, electron spin = –1/2

c) n = 5, subshell = d, electron spin = +1/2

d) n = 5, subshell = p, electron spin = –1/2

e) n = 5, subshell = s, electron spin = +1/2