Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Atomic Orbital Representations and the Orbitron**

Summary Sheet

1. Which of the following is a set of quantum numbers that are NOT allowed?
   1. n=4, l=3, ml=-3, ms=1/2
   2. n=2, l=2, ml=1, ms=-1/2
   3. n=3, l=0, ml=0, ms=-1/2
   4. All are allowed.
2. Explain your answer to question 1.
3. Define the following:
   1. angular node
   2. radial node
4. Consider a 6d orbital
   1. How many angular nodes does the orbital have?
   2. How many radial nodes does the orbital have?
   3. How many nodes does the orbital have in total?
5. Could the following be a radial distribution graph for a 3s orbital? Explain your reasoning.

A picture containing line, plot, diagram

Description automatically generated

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