

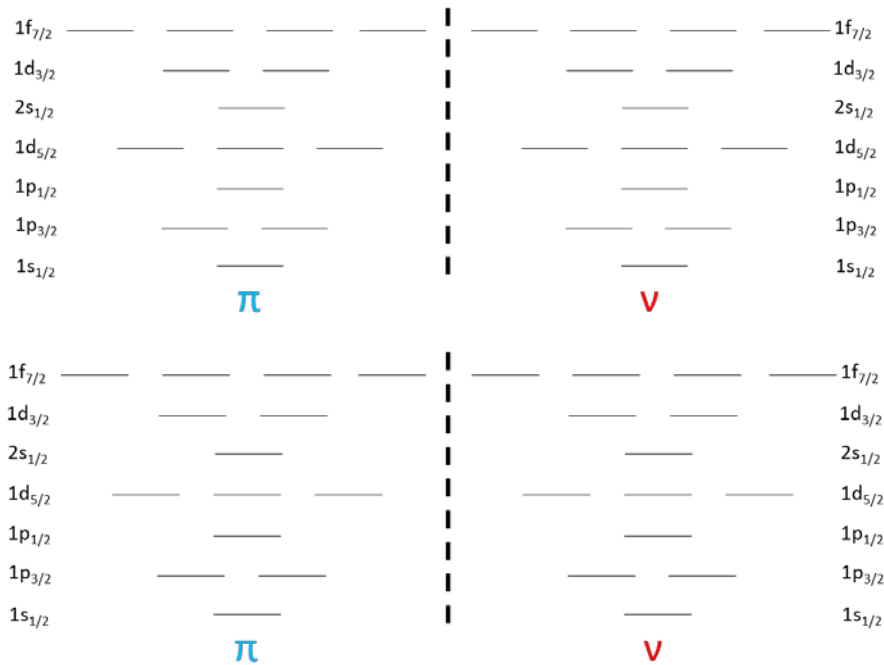
Names: _____

PHYS 7501, FS 2021

Group Activity 3

Due: In class, August 31st

1. What levels lj would result from the $n=7$ harmonic oscillator state (where the first is $n=1$)?
2. What was the key breakthrough in shell-model development that resulted in the accurate prediction of the magic numbers above 20?
3. Fill-out the single particle levels and, based on this, determine J^π for the ground-state and first two excited states of ^{25}Mg and ^{39}Ca . Verify your results with the NNDC database.



4. The measured magnetic dipole moment for ^{15}O lies directly on one of the Schmidt lines. Which one? Why?