Exercise Sheet 11 due 15 July 2019

1. *multiplets*

Show that the multiplets in a

- d^2 shell are ${}^1S$, ${}^3P$, ${}^1D$, ${}^3F$, and ${}^1G$.
- d^3 shell are ${}^2P$, ${}^4P$, $2\times{}^2D$, ${}^2F$, ${}^4F$, ${}^2G$, and ${}^2H$.

Write a program that finds the multiplets in any given shell.